

Standard

MCS 5100 Release 4.0
Standard 01.05
Part No. NN42020-110
January 2008

System Management Console User Guide



Copyright © 2008, Nortel Networks. All rights reserved.

Sourced in Canada

The information in this document is subject to change without notice. The statements, configurations, technical data, and recommendations in this document are believed to be accurate and reliable, but are presented without express or implied warranty. Users must take full responsibility for their applications of any products specified in this document. The information in this document is proprietary to Nortel Networks.

Nortel, Nortel (Logo), and the Globemark are trademarks of Nortel Networks.

Microsoft, Windows, Windows NT, Internet Explorer, and Outlook are trademarks of Microsoft Corporation.

Oracle is a trademark of Oracle Corporation.

All other trademarks are the property of their respective owners.

Revision history

January 2008

Standard 01.05. This document is up-issued to support Multimedia Communication Server 5100 Release 4.0. This document addresses CR Q01812909.

April 2007

Standard 01.04. This document is up-issued to support Multimedia Communication Server 5100 Release 4.0. This document addresses CR Q01616608.

March 2007

Standard 01.03. This document is up-issued to support Multimedia Communication Server 5100 Release 4.0. This document addresses CR Q01557499.

January 2007

Standard 01.01. This document is issued to support Multimedia Communication Server 5100 Release 4.0. This document contains information previously contained in the following legacy document, now retired: *System Management Console User Guide* (NN10273-111).

January 2006

Standard 4.0. This document is up-issued for MCS 5100 Release 3.5. Some referenced document numbers changed.

November 2005

Standard 3.0. This document is up-issued for MCS 5100 Release 3.5.

November 2005

Standard 2.0. This document is up-issued for MCS 5100 Release 3.5.

October 2005

Standard 1.0. This document is up-issued for MCS 5100 Release 3.5.

Contents

New in this release	11
Feature changes	11
Base OAMP supportability	11
CallP checkpointing support	12
Complete re-IP support	12
IBM core hardware introduction	12
MAS OAM/fault integration	12
Password management	13
SIP Denial of Service mitigation	13
SSL for web and SOAP interface	13
System Management Console dual NIC PC support	14
IPCM profile	14
Other changes	14
Introduction	15
How this guide is organized	15
Audience	16
Text conventions	16
Acronyms	16
Related publications	17
How to get help	18
System Management Console—getting started	19
System Management Console overview	19
System Management Console installation	19
System requirements	20
Installing the System Management Console for the first time	21
Uninstalling the System Management Console	22
Upgrading the System Management Console	22
System Management Console log on	22

Logging on to the System Management Console	23
System Management Console navigation.....	25
System Management Console layout	25
Title bar	25
Menu bar	25
Icon tool bar	26
Alarm summary bar	27
Configuration view	27
Work area	28
Refresh	28
Refreshing the work area	29
Refreshing the configuration, logical and physical views	29
Views	29
Logical view window	30
Physical view window	30
Logical and physical view icons	31
Network Data configuration and management	33
License key management	33
Licence key updates	34
Updating a license key	35
Querying a license key	35
Addresses	35
Configuring an IP address	36
Deleting an address	36
Component re-IP	37
Editing the address table	37
SNMP Profiles	38
Configuring an SNMP profile	38
Deleting an SNMP profile	39
Physical sites	39
Configuring a site	39
Deleting a site	40
External nodes	40
Configuring an external node	40

Deleting an external node	41
Informational elements	41
Configuring an informational element	41
Deleting an informational element	42
Cipher suites	42
Configuring cipher suite usage	42
Subnet masks	43
Configuring a subnet mask	43
Deleting a subnet mask	43
Static routes	43
Configuring a static route	44
Deleting a static route	44
OAM profiles	44
OSS server	45
Record format	45
Configuring a log record format	45
Configuring an OM record format	46
Configuring an Accounting record format	46
File Type	47
Adding a file type	47
Format path	48
Configuring a log format path	48
Configuring an OM format path	49
Configuring an accounting format path	49
FTP Push	50
Creating an FTP Push profile	50
Pushed file directory structure	51
SNMP Manager	52
Adding an SNMP manager	52
Server configuration and maintenance	55
Server configuration and management overview	55
Server configuration	56
Configuring a server.	56
Deleting a server	57
Server performance statistics	58

Monitoring a server	58
Configuring server alarm thresholds	59
Database configuration and management	61
Viewing the database monitor status	61
Configuring resource thresholds	62
Network element configuration and management	63
Network element configuration overview	63
Network element configuration	63
Adding a network element	64
Network element modification	66
Modifying a whole network element	66
Modifying a network element instance	67
Modifying configuration parameters	68
Deleting a network element	68
Network element software updates	69
Updating network element software	70
Network element management	71
Stopping a network element	71
Starting a network element	72
Restarting a network element	72
Killing a network element	73
MCS system without a BCP	73
Configuring Session Manager parameters	73
MAS OAM fault integration	74
Configuring a MAS to FPM association	74
IPCM profile	75
IPCM profile configuration	75
Configuring IPCM profile parameters	76
IPCM profile server configuration	76
Configuring an IPCM profile server	76
Verifying firmware codes	77
Media Gateway	78
Upgrade the Media Gateway firmware	78
Checking the Media Gateway firmware version	78

Upgrading the Media Gateway firmware	79
Alarm browser	81
Alarm browser fundamentals	81
Alarm information displayed in the browser	82
Alarm browser operations	83
Viewing alarms	84
Viewing alarm details	84
Sorting alarms based on alarm attribute	84
Copying alarm information	85
Clearing alarms	85
Refreshing alarm information	85
Log browser	87
Log browser fundamentals	87
Log browser operations	88
Starting the log browser from the configuration view	89
Starting the log browser from the logical or physical view	89
Clearing log details	89
Saving logs	90
Log file rotation period configuration	90
Dual NIC PCs	90
Operational measurements browser	91
Operational measurements browser fundamentals	91
OM browser operations	92
Starting the OM browser from the configuration view	93
Starting the OM browser from the physical or logical view	93
Viewing register information of a specific OM group	93
Saving OM data	93
Refreshing data in the OM browser	94
OM file rotation period configuration	94
OM interval period configuration	94
Administrator tools	95
User administration	95
Adding or modifying an administrator	96

Deleting an administrator	97
System Manager password reset	97
Role administration	97
Adding or modifying a role	97
Privileges	98
Deleting a role	101
Viewing and forcing off users	102
User password rules	102
Configuring password complexity	102
Database export and import	103
Exporting the password and properties for an SMC user	103
Importing the password and properties for an SMC user	104
Provisioning Client interface	104
Starting the Provisioning Client interface	104
Provisioning Client failed authentication	105
Configuring failed authentication parameters	105
Message of the day	105
HTTP Denial of Service mitigation	106
Enabling HTTP DoS mitigation	107
HTTP DoS engineering parameter group	107
Configuring HTTP DoS mitigation	109
SIP Denial of Service mitigation	109
Enabling SIP DoS mitigation	109
SIP DoS engineering parameter group	110
Calculations	111
Example using the default values	111
Configuring SIP DoS mitigation	112
Trusted node configuration	112
Configuring trusted nodes	112
Overload Engineering parameters	113
Configuring call queue thresholds	114
Troubleshooting	115
System Management Console connection is lost	115
Font problems in System Management Console	116
Removing PS fonts from a workstation	116

New in this release

The following sections describe what is new in this document for Multimedia Communication Server (MCS) 5100 Release 4.0.

Feature changes

The following features affect this document:

- “[Base OAMP supportability](#)” on page 11
- “[CallP checkpointing support](#)” on page 12
- “[IBM core hardware introduction](#)” on page 12
- “[MAS OAM/fault integration](#)” on page 12
- “[Password management](#)” on page 13
- “[SIP Denial of Service mitigation](#)” on page 13
- “[System Management Console dual NIC PC support](#)” on page 14
- “[IPCM profile](#)” on page 14

The following sections describe the feature changes for this release.

Base OAMP supportability

The Base Operations, Administration, Maintenance, and Provisioning (OAMP) supportability feature enhances the support and hardware configuration of the Multimedia Communication Server (MCS) 5100 product. The feature includes the following benefits:

- shared network data
- consolidated configuration data
- consolidated software to reduce memory requirements
- ability to configure additional Accounting Managers (AM), and Fault and Performance Managers (FPM)

Consequently, the System Management Console graphical user interface (GUI) layout is different. The application area replaces the general information area (GIA). The system tree pane is replaced by the navigation pane.

CallP checkpointing support

The CallP checkpointing support feature ensures that SIP messaging for calls remain synchronized, and that essential cached data is available if a standby server must become active. By remaining synchronized, call information is preserved during call failover. With this feature, the standby server can be a hot standby.

Complete re-IP support

With the Complete re-IP support feature, you do not need to reinstall the server software after you change various server identification parameters, such as country, time zone, and IP address.

IBM core hardware introduction

This feature introduces the IBM x306m hardware for all the core MCS servers. The Sun Fire V100, V210, and Netra 240 servers are not supported on Release 4.0.

MAS OAM/fault integration

The Media Application Server (MAS) Operations, Administration, and Maintenance (OAM) fault integration feature provides the integration of the log and alarm notifications from the MAS into the MCS Fault and Performance Manager (FPM). After you provision the MAS servers on the MCS system, the management server can receive logs and alarms from the MAS, which increases the visibility of MAS problems.

After the FPM restarts, it queries the alarm state of each MAS server configured on the MCS and reflects the state of each server on the System Management Console. Configuration of the FPM to request periodic updates to the MAS alarm state is provided, to ensure synchronization between the MCS and MAS.

With this feature you can use the System Management Console to view Media Application Server alarms and logs.

Password management

This Password management feature provides encryption of subscriber and administrator passwords, password complexity rules, and password enforcement. The system stores all passwords in an encrypted format for improved security. Password policies provide the ability to configure a default subscriber password and to enforce password changes. Complexity rules and password enforcement rules govern Administrator passwords.

SIP Denial of Service mitigation

The SIP Denial of Service mitigation feature provides a mechanism to protect the call server from Denial of Service (DoS) attacks. The feature protects the call server from wasting computing resources due to SIP messaging that exceeds the configured threshold. Statically configure the IP addresses of the SIP servers to maintain Domain Name System (DNS) lookup advantages.

SSL for web and SOAP interface

This feature provides the following benefits:

- increased security for the MCS Provisioning Client and Personal Agent (PA)
- separation of the Personal Agent from the Provisioning Client
- protection mechanisms that defend against brute force and dictionary password attacks

This feature increases security in the MCS Provisioning Client and Personal Agent by adding Hypertext Transfer Protocol (HTTP) over Transport Layer Security (HTTPS) support for all Web transactions. The Provisioning Client and Personal Agent use different Web server ports to implement generic routing Access Control Lists (ACL).

Additional PAs, separate from Provisioning Clients and running on different servers, are supported. You can configure additional PAs, depending on the number of subscribers.

The protection mechanisms provide

- temporary locking of subscriber or administrator accounts after the configured number of failed authorization attempts
- temporary blocking of HTTP or HTTPS requests from a particular source after a configurable request-rate threshold is exceeded.

System Management Console dual NIC PC support

The System Management Console dual NIC PC support feature supports log browsing functionality at the System Management Console (SMC) if the PC has two Network Interface Cards (NIC).

IPCM profile

With the IPCM profile feature, you can upgrade Nortel IP Phones 2004 that have Unistim firmware to session initiation protocol (SIP) firmware.

Other changes

This section describes other technical changes for this release.

The AudioCodes Mediant 2000 is now called the Media Gateway.

Java Web Start technology supports the installation, start, and update of the System Management Console.

This document is renumbered from NN10273-111 to NN42020-110.

Introduction

This guide provides instructions for using the System Management Console. The System Management Console is the interface used to configure, monitor, and manage the Multimedia Communications Server (MCS) component hardware and software.

The System Management Console interacts with the MCS system hardware and software components through the System Manager. The tasks described in this guide are generic and do not include specific information for any one component.

The topics in this chapter include:

- “How this guide is organized” on page 15
- “Audience” on page 16
- “Text conventions” on page 16
- “Acronyms” on page 16
- “Related publications” on page 17
- “How to get help” on page 18

How this guide is organized

This guide is organized as follows:

- “System Management Console—getting started” on page 19
- “System Management Console navigation” on page 25
- “Network Data configuration and management” on page 33
- “Server configuration and maintenance” on page 55
- “Database configuration and management” on page 61
- “Network element configuration and management” on page 63
- “Alarm browser” on page 81
- “Log browser” on page 87

- “Operational measurements browser” on page 91
- “Administrator tools” on page 95
- “Troubleshooting” on page 115

Audience

This guide is intended for administrators who use the System Management Console to manage the MCS system component hardware and software.

Text conventions

This guide uses the following text conventions:

bold text	Indicates a menu option, link, or command key you need to click. Examples: Click Apply
<i>italic text</i>	Indicates a document title Example: <i>MCS 5100 Overview</i> (NN42020-143)
<ElementName>	Indicates a configured element name in the GUI tree Example: <ApplicationServerName>
separator >	Indicates a menu path Example: Configuration > Query

Acronyms

This guide uses the following acronyms:

BPS	Business Policy Switch
GUI	graphical user interface
IP	Internet protocol
IPCM	IP Client Manager

Mbyte	megabyte
MCS	Multimedia Communications Server
MCP	Multimedia Communications Portfolio
MO	managed object
NE	network element
OAM	Operations, Administration, Maintenance
OEM	Oracle Enterprise Manager
OM	operational measurement
PRI	primary route interface
RAM	random access memory
RTP	Real-Time Protocol
SIP	Session Initiation Protocol
SNMP	Simple Network Management Protocol
UAS	Universal Audio Server
UFTP	UNIStim File Transfer Protocol
URL	uniform resource locator (Internet address)
XML	EXtensible Markup Language

Related publications

For more information, see the following publications:

- *Alarm and Log Reference* (NN42020-703)
- *Database Manager Fundamentals* (NN42020-142)
- *IP Client Manager Fundamentals* (NN42020-106)
- *Operational Measurements Reference* (NN42020-704)
- *Provisioning Client User Guide* (NN42020-105)
- *MCS 5100 Overview* (NN42020-143)
- *MCS Installation and Commissioning* (NN42020-308)
- *MCS Upgrades—Maintenance Releases* (NN42020-303)
- *System Manager Fundamentals* (NN42020-109)

How to get help

For service issues, contact your local support or Information Services team.

System Management Console—getting started

The topics in this chapter include:

- “System Management Console overview” on page 19
- “System Management Console installation” on page 19
- “System Management Console log on” on page 22

System Management Console overview

Use the System Management Console to interact with the element manager (System Manager) of the MCS software and hardware. The System Management Console is a Java-based graphical user interface (GUI) that operates on a personal computer (PC) that runs a supported Microsoft Windows operating system. Use the System Management Console to

- administer system, database, and service components
- deploy and configure system sites, servers, components, and component services
- monitor system using alarms, logs, and performance measurements
- manage collection of operations, administration, and maintenance information



Note: The System Management Console only supports the display of the English language.

System Management Console installation

Install the System Management Console on administrator workstations (management PCs) during system deployment. The System Manager must be deployed and operational before you can connect to the System Management Console.

The System Management Console installation uses Java Web Start technology.

You can install only one version of the System Management Console on a workstation. During installation of the System Management Console, the Java Machine uses the JNLP file to obtain version information.

The System Management Console version must correspond to the load version that you are installing. You can view the current System Management Console version by selecting Help > About MCP System Management Console. Before deploying software upgrades, you must upgrade the System Management Console to the equivalent version. Each time you start the System Management Console, the system automatically checks for and applies updates.

For more information, see the following topics:

- [“System requirements” on page 20](#)
- [“Installing the System Management Console for the first time” on page 21](#)
- [“Uninstalling the System Management Console” on page 22](#)
- [“Upgrading the System Management Console” on page 22](#)

System requirements

Nortel recommends that the management PC meet the following requirements.:

Table 1 Management PC requirements

Category	Minimum requirements	Recommended requirements
Processor	600 MHz Pentium-class or equivalent processor	1.0 GHz (or higher) Pentium-class or equivalent processor
Free RAM	64 MB of RAM This requirement is in addition to the memory requirements of the operating system and other concurrent applications.	64 MB of RAM This requirement is in addition to the memory requirements of the operating system and other concurrent applications.
Free hard disk drive space	50 MB	50 MB
Mouse	Required	Required
Video graphics card	640 x 480 @8bpp [256 colors] VGA	800 x 600 @16bpp [65,536 colors] VGA or better
Sound card	not applicable	not applicable

Table 1 Management PC requirements

Category	Minimum requirements	Recommended requirements
Operating systems	Microsoft Windows 98(SE)/ME/2000/XP/ Microsoft Windows NT 4.x with Service Pack 5 (SP5)	Microsoft Windows 2000/XP/98(SE) Microsoft Windows NT 4.x with Service Pack 5 (SP5)
Network connectivity	56 Kbps modem	10Base-T or other fast network connection (DSL, Cable, LAN, etc.)
Internet browsers	Netscape Communicator 7.0 Microsoft Internet Explorer 6.0	Netscape Communicator 7.1 or greater Microsoft Internet Explorer 6.0 or greater
Java	Sun Java 1.4.9	Sun Java 1.4.9 or higher
Cookies	Enabled	Enabled
Javascript	Enabled	Enabled

If you use a Proxy server in Java network settings, this Proxy server must allow access to the IP Address & port. If there is no access to the IP Address & port, use Direct Connection in the Java network settings.

Installing the System Management Console for the first time

- 1 On the workstation, open Internet Explorer (IE).
- 2 In the IE address bar, enter the following:

HTTP://<IP address>:12120

where <IP address> is the IP address of the System Manager (SM) or SM service IP.

The <IP>/index.html page load in the browser.

- 3 Click the **Launch MCP Management Console** link.

The System Management Console installs automatically. After the installation is complete, a log on window appears.

Uninstalling the System Management Console

- 1 Start javaws.exe.
- 2 Select the **MCP Management Console** and click **Remove Selected Application**.

Upgrading the System Management Console

The System Management Console automatically updates (if required) each time you start it.

System Management Console log on

Only individuals with defined administrative roles have access to the system through the System Management Console. Which menu options are available depends on the role of the administrator and the system architecture. The three administrator roles are:

- general administrator

General administrators have management console access to configure servers, components, and services. They can monitor operations and maintenance information, and provision end-user information.

- database administrator

Database administrators can log on to the Oracle Enterprise Manager and use the management tools to perform database administration tasks. In addition, they have management console access which lets them perform the same tasks as general administrators.

- system administrator

The system administrator is the system superuser assigned during the initial deployment. System administrators have access rights to all component modules, and are responsible for adding and defining the roles of other administrators. The system administrator has access to all tasks and tools available through the System Management Console.

To configure System Management Console rights, select Administrator > Role administrator.

Use the Provisioning client to add administrators and configure rights for provisioning. For additional information about adding administrators and defining administrator roles, see the *Provisioning Client User Guide* (NN42020-105).

Use the Oracle Enterprise Management (OEM) Console to add administrators and configure database administration rights. For more information, see *Database Manager Fundamentals* (NN42020-142).

Logging on to the System Management Console

- 1 From the workstation, start the System Management Console.

The log on dialog box opens.

- 2 Enter the required log on information

Log on information fields include the following:

- User ID: the user name of the administrator
- Current Password: the administrator's password
- Server: the logical IP address of the System Manager component
- Force Out check box: (optional) if selected, the user's session ends

- 3 Click **OK**.

- 4 To terminate a session, from the System Management Console menu bar, select **File > Exit**.

System Management Console navigation

The topics in this chapter include:

- [“System Management Console layout” on page 25](#)
- [“Refresh” on page 28](#)
- [“Views” on page 29](#)

System Management Console layout

The System Management Console (SMC) uses the familiar Windows layout. Like other Windows applications, the SMC consists of the title bar on the top, the menu bar, and an icon-based toolbar. Under the icon-based toolbar, an alarm summary indicates the status of the network elements in the MCS system. Below the alarm summary are the configuration view in the left pane and the work area in the right pane.

Title bar

The title bar indicates the following items:

- the application—MCP System Management Console
- the software version of the System Manager
- login user name
- IP address of the System Manager

Menu bar

Use the menu bar to access to File, Views, Administration, Tools, and Help menus. Menu items provide access to functions not accessible from the GUI tree pane.

Not all menu options are available for every component or server. Unavailable menu options appear dimmed.

This guide discusses menu options with the related procedures.



Note: You can access available menu options for an element that is selected in the GUI tree by right-clicking to open the shortcut menu.

Icon tool bar

The icons on the tool bar are button shortcuts to the record browsers and the refresh button. Not all tool bar options are available for every component or server. Dimmed icons are unavailable for the element selected in the GUI tree.

The tasks associated with the tool bar options are described in the relevant sections of this guide.

Figure 1 System Management Console tool bar icons



As shown in [Figure 1 “System Management Console tool bar icons” on page 26](#), the icons from left to right are:

- Alarm browser
- OM browser
- Log browser
- Logical view
- Physical view
- Refresh

Alarm summary bar

This narrow horizontal bar, located below the toolbar, provides a concise system-wide summary of alarms for managed and monitored MCS network elements. The background color of the alarm bar (green, yellow, orange, or red) indicates the most severe alarm (none, minor, major, or critical) for the system. You can see the total number of alarms for the system, as well as the number of alarms of each severity level.

For information about alarms, see *Alarm and Log Reference* (NN42020-703).

Configuration view

The configuration view appears in the left pane of the System Management Console. After you select a leaf node in the tree, a new window appears in the application area in the right pane. You can collapse and expand the tree structure.

Information is organized into four sections:

- Network Data and Mtc: Use this section to define information such as IP addresses, log report formats, OSS servers, and other data that does not change often, but is reused during other configuration tasks. Enter the data in this section to avoid retyping, and typing errors, during other configuration tasks. Use this section to manage License keys for activating features.
- Servers: Use this section to configure servers and to monitor their hardware and operating systems.
- Databases: Each Database has a folder. The folder contains software load and configuration data so that the System Manager can connect to the database. The System Manager can then distribute database connection information to other network elements that need database access.
- Network Elements: Use this section to configure all managed and monitored MCS network elements. Each network element type has a folder, and each configured network element has a subfolder. After you select a network element folder, the Alarm Browser, OM Browser, and Log Browser icons become active for that network element. Use this section to make changes to load deployment; configuration parameters; om, log, and accounting record configuration. Use this section to perform maintenance tasks, such as start and stop, for network elements.

Work area

Locate the work area in the right pane of the System Management Console. After you select a node from the configuration view pane, a window appears in the work area. Windows in the work area display information about the selected node. The information displayed in the work area is described with the respective configuration view level in subsequent chapters. Some configuration view nodes (Network Data and Mtc and Network Elements) have no associated windows.

Windows that appear in the work area have the following buttons.



Add: Use this button to add an element.



Edit: Use this button to make changes to an existing element.



Delete: Use this button to remove an existing element.



Refresh: Use this button to update the information in the window. For more information, see “[Refreshing the work area](#)” on page 29.

Use the work area to view and manage multiple windows. Windows in the work area can be moved, resized, or closed.

Refresh

Use the Refresh to update the information displayed in the work area of the System Management Console. Refresh is available for all levels of the GUI tree, except the logical nodes of Sites, Server, and Components.

The Refresh tool is not normally required because the System Management Console updates automatically after an event occurs.

Refreshing the work area

Use the following procedure to manually refresh the information displayed by windows in the work area.

- 1 From the System Management Console GUI tree, select system, a site, a server, a component, or service.
- 2 On the corresponding window that appears in the work area, click **Refresh**

Figure 2 Refresh button.



Refreshing the configuration, logical and physical views

The Refresh tool also refreshes the configuration, logical view, and physical view windows of the System Management Console. After you click Refresh, the tool queries the System Manager for the latest topology information and updates this information on the System Management Console.

To refresh the configuration, logical and physical views, select **Tools > Refresh**, or click the **Refresh** icon in the tool bar.

The trees in the configuration view and logical and physical view windows collapse. The system updates the data to display the latest topology information.

Views

The logical and physical view windows organize network elements by element type and location, respectively. You can use these windows to diagnose fault conditions.

Logical view window

The logical view window provides a graphical view of the network elements (NE), servers, and the logical databases. In this view, you cannot determine which network elements are deployed on which servers.

Using this view, you can see the alarm conditions for all equipment for each NE type. Select an NE instance to enable the alarm, log and OM browser buttons for that element.

Open the logical view window by right-clicking on the alarm summary area, or by clicking the logical view window icon in the icon toolbar.

Figure 3 Logical view icon



Physical view window

The physical view window provides a graphical view of the MCS system. The elements are organized by site and server, and then by the network element applications deployed on the server.

Using this view, you can view alarm conditions for all monitored equipment in each site. Select a network element to enable the alarm, log, and OM browser buttons for that element.

Open the physical view window by right-clicking on the alarm summary area, or by clicking the physical view window icon in the icon toolbar.

Figure 4 Physical view icon



Logical and physical view icons

For both view windows, a green dot indicates that the state of the network element or server is clear. A yellow, orange, or red triangle indicates an alarm. If the bar icon in the triangle is horizontal, it indicates a minor alarm. An angled bar indicates a major alarm; a vertical bar indicates a critical alarm. A blue triangle that does not have a bar indicates a warning.

An icon of a grey down arrow indicates unmanaged network elements and servers. For a server, this icon indicates that the monitor for the server is not running. For a network element or instance, the gray down arrow indicates that we do not have a reported state from that element. The element is Offline, Configured, or unavailable because of network issues.

Network Data configuration and management

The topics in this chapter include:

- “License key management” on page 33
- “Addresses” on page 35
- “SNMP Profiles” on page 38
- “Physical sites” on page 39
- “External nodes” on page 40
- “Informational elements” on page 41
- “Cipher suites” on page 42
- “Subnet masks” on page 43
- “Static routes” on page 43
- “OAM profiles” on page 44

License key management

Updating and querying license keys requires an administrative role with LicenseKeyService privilege.

The following list provides a brief description of each tab displayed on the Licensekey window.

- Features: This tab shows licenseable units that can be enabled or disabled and that also have a limit restricting their use.
- Feature States: This tab shows licenseable units that can only be enabled or disabled. They do not have limits associated with their use.
- Version info: This tab shows the version of the license key (this may differ from the software version during upgrade). It shows the date and time that the licensekey was generated as well as the id of the generator and the licensekey comments.

- Licenseable Units: This tab shows licenseable units that are always enabled and have a limit restricting their use.
- Network Elements: This tab shows the network elements that do not have ports or endpoints associated with them in the licensekey. The tab shows the number of these network elements that can be configured in the system as well as the type and number of configured network elements. .



Note: The Network Elements tab does not show information about servers. A redundant Session Manager or System Manager pair is one network element. The Servers Licensed value is the number of network elements allowed by the license. The Current Server Usage value is the number of network elements currently used.

- Network Elements with Ports: This tab shows the network elements that have ports but do not have endpoints associated with them in the license key. This tab shows the number of these network elements that can be configured in the system and the number of ports that can be used. This tab also shows the current number of configured network elements of each type.
- Network Elements with Ports and EndPoints: This tab shows the network elements that have ports and endpoints associated with them in the licensekey. The tab shows the number of these network elements that can be configured in the system and the number of ports and endpoints that can be used. It also shows the current number of configured network elements of each type.

Licence key updates

Updates can be performed for a current release and any subsequent maintenance releases only. New major releases (for example, 3.0 to 4.0) require a new license key.

Updates to a license key can only increase system capabilities. For example, licenses can be updated to allow capabilities for more subscribers, not fewer.

Network elements can register their interest in particular key codes within the license key. After you update the license key, the key codes automatically push down to all elements with a registered interest.

Updating a license key

Administrators update license keys by selecting Network Data and Mtc > Licensekey in the configuration view of the System Management Console. The License Key can be updated dynamically without any disruption of service. The update rolls back if the License Key update procedure fails.

- 1** In the System Management Console, from the configuration view, select **Network Data and Mtc > Licensekey**.
- 2** Click the **Edit** button at the Licensekey window.
The Select License key File dialog box opens.
- 3** Navigate to the license key file that is on the local computer, select it, and click **Open**.

A confirmation message appears after the license key is successfully saved into the database. If the update fails, the License Key update rolls back.

Querying a license key

To query license keys, navigate the tabs on the Licensekey window. The licensed limits and current usage appear in the display.

Addresses

To avoid configuration errors related to entering IP addresses inaccurately, enter all the IP addresses for all managed and monitored network elements at the same time, in the Addresses window.

To open the Addresses window, select Network Data and Mtc > Addresses from the navigation view. To perform operations at the Addresses window, you must have IPAddressService privileges.

Before you add a server to the MCS network, you must add the server IP address, in the Addresses window and associate a Logical Name with that IP Address. You cannot delete an IP address if a third-party Trusted Device, Gateway, Operations Support System (OSS) Server, or server that hosts an MCS network element is configured against the Logical Name for that IP address. You can change the IP address, but services are interrupted.

Configuring an IP address

Use the following procedure to enter Addresses for servers and network elements.



Note: Editing an entry and changing the IP address disrupts service for the network element and all services for the network elements deployed on the server

- 1 In the System Management Console navigation pane, select **Network Data and Mtc > Addresses**.
- 2 In the Addresses window, click **Add** or select an entry and click **Edit**.
- 3 Enter the configuration data.
Both fields, Logical Name and IP Address, must be unique values.
- 4 Click **Apply**.

Deleting an address



Note: Before deleting an address, you must delete the network element or server that uses that IP address.

- 1 In the System Management Console, in the Addresses window, select an entry.
- 2 Click **Delete**.
- 3 Click **Yes** to confirm the delete.

Component re-IP

The MCS software components belong to three broad categories based on their interactions with the System Manager:

- **Managed:** The System Manager manages the core MCS components, such as the Accounting Manager, IP Client Manager, Database, Provisioning Manager, and Session Manager.
- **Monitored:** Some components are monitored, but not managed, by the System Manager. These components can be running on a server that does not support re-IP.
- **Informational:** Some components are neither managed nor monitored by the System Manager. The System Manager has access to only the IP addresses of these components.

The System Manager maintains an address table, which is a central record of all IP addresses in the network. Any software component that falls outside the scope of Managed, Monitored or Informational does not appear in the address table, and is not covered by this feature.

Administrators with sufficient privileges can add to, edit, or delete entries in the address table by using a script, or by using the System Management Console. The system displays a confirmation message before it applies the changes. After you confirm your changes, the system applies them to all MCS components that are managed by the System Manager. See “[Editing the address table](#)” on page 37.

The Complete re-IP feature adds two services:

- The Informational Element service provides type information, and replaces the Third Party Trusted Devices configuration service.
- The External Nodes configuration service allows you to add multiple Informational Elements with the same IP address and different ports.

To locate these services, in the System Management Console, in the configuration view, expand Network Data and Mtc. For a practical application, see “[Trusted node configuration](#)” on page 112.

Editing the address table

- 1 Start the System Management Console.

- 2** Select **Network Data and Mtc > Addresses**.
- 3** Select and modify or delete an address, or add an address, and click **Apply**.
- 4** Confirm the changes.

SNMP Profiles

The System Manager uses simple network management protocol (SNMP) profiles to access (query) SNMP agents on network elements. You can access or create SNMP Profiles by selecting Network Data and Mtc > SNMP Profiles from the navigation pane. To perform SNMP profile configuration, you must have SnmpProfileService privileges.

SNMP profiles are created to configure consistent SNMP parameters that the System Manager uses to monitor the condition of the operating system and server hardware for the managed and monitored MCS network elements.

You create a profile that has a port number and read and write community strings that match the SNMP daemon settings on a server. After you create the profile and server configuration begins, you associate the profile with a server so that the System Manager can monitor the server.

After you create an SNMP Profile, you cannot edit it. If administrators want to change the SNMP community string, or any other parameter, to increase security, they must

- configure a new SNMP profile as described in “[Configuring an SNMP profile](#)” on page 38
- assign the new SNMP profile to each server as described in “[Server configuration](#)” on page 56

To increase SNMP security, administrators can be assigned an administrative role that does not have SnmpProfileServices privilege.

Configuring an SNMP profile

Use the following procedure to create a new SNMP profile. Afterward, use the System Management Console to associate the new SNMP profile with the servers that you want to use the profile.

- 1 Select **Network Data and Mtc > SNMP Profiles** from the navigation pane.
- 2 Click **Add** or select an entry and click **Edit**.
- 3 In the Server SNMP Profiles dialog box, enter the configuration data.
- 4 Click **Apply**.

Deleting an SNMP profile.



Note: Before deleting an SNMP Profile, edit any servers that use the profile and configure the servers to use a different SNMP Profile.

- 1 Select an entry from the SNMP Profiles window.
- 2 Click **Delete**.
- 3 Click **OK** to confirm the delete.

Physical sites

To manage site information you must have PhysicalSiteService privileges. After you select **Network Data and Mtc > Physical Sites** in the configuration view pane, the work area displays a window with the following site-level information:

- Site Name: a name configured for this site by the administrator
- Zone: the Universal Transverse Mercator (UTM) zone for the site
- Easting: the UTM Easting coordinate for the site
- Northing: the UTM Northing coordinate for the site

Configuring a site

- 1 Select **Network Data and Mtc > Physical Sites** from the navigation pane.
- 2 Click **Add** or select an entry and click **Edit**.

- 3 In the Site dialog box, enter the configuration data.

Table 2 Site configuration

Field	Value	Description
Site name	alphanumeric (1-20 characters)	a unique name identifying the site
Zone	alphanumeric (1-3 characters)	UTM zone location of this site
Easting	integer (1-1 000 000 digits)	Easting of the site For numbers greater than 1 100, do not enter spaces.
Northing	integer (1-7 digits)	Northing of the site

- 4 Click **Apply**.

Deleting a site



Note: Administrators must delete all the servers and network elements of a site, before deleting the site itself.

- 1 Select the site from the Physical Sites window.
- 2 Click **Delete**.
- 3 Click **Yes** to confirm the delete.

External nodes

To perform operations on this data, you must have InfoElementService privileges.

Configuring an external node

- 1 In the System Management Console, from the navigation pane, select **Network Data and Mtc > External Nodes**.
- 2 Click **Add** or select an entry and click **Edit**.

- 3 In the Add Trusted Device dialog box, enter the configuration data:
 - **Name**—Enter the name of the device, such as MAS110.
 - **DeviceAddress**—Use the drop-down list to select the address of the device.
- 4 Click **Apply**.

Deleting an external node

- 1 Select an entry on the **External Nodes** window.
- 2 Click **Delete**.
- 3 Click **Yes** to confirm the delete.

Informational elements

To configure this data you must have InfoElementService privileges.

Configuring an informational element

- 1 In the System Management Console, from the navigation pane, select **Network Data and Mtc > Informational Elements**.
- 2 Click **Add** or select an entry and click **Edit**.
- 3 In the Add Informational Element (IE) dialog box, enter the configuration data:
 - **ShortName**: the name of the device, such as MAS110
 - **LongName**: the long name of the device (same as the description of a long name field for a Network Element)
 - **Node**: external node configured
 - **Port**: an integer, 0 to 65 534
 - **Trusted**: specifies whether the informational element is trusted
The IE is trusted for SIP communications only, not for any other protocol.
 - **ExemptDoSProtection**: specifies whether the IE is exempt from Denial of Service Protection
 - **Type**: Informational Element type

- **SIP Transport:** SIP Transport type

4 Click **Apply**.

Deleting an informational element

- 1** Select an entry on the **Informational Element** window.
- 2** Click **Delete**.
- 3** Click **Yes** to confirm the delete.

Cipher suites

Use cipher suites to configure the encryption used for communication between the System Manager and the MCS network elements. To configure cipher suites, you must have CipherSuiteService privileges. You do not add cipher suites to the MCS system; you enable or disable them.

After you apply a new list of cipher suites to the network, you stop all configuration streams, log streams, alarm streams, OM streams, and accounting streams between network elements. After the streams resume, they are secured with the newly applied cipher suites. You do not need to restart the network element instances. Two of the cipher suites cannot be disabled. These two cipher suites ensure that network element communication can always continue over a common negotiated cipher suite.

The normal alarms associated with communication for the particular subsystem are logged while the connections are reestablished. The alarms clear automatically after normal communication resumes.

Configuring cipher suite usage

- 1** In the System Management Console, from the navigation pane, select **Network Data and Mtc > Cipher Suites**.
- 2** In the Cipher Suites window, select an entry for the cipher suite to enable or disable, and click **Enable** or **Disable**.
- 3** Click **Apply**.

Subnet masks

Subnet Masks are only required for the RTP Media Portal (renamed to Border Control Point 7000 Series). Subnet Masks provide greater flexibility in defining IP addresses for the Media Portal Service Cluster and define the scope of an address space. This information is used to scope the extent of the service-planes in the “Media Portal Cluster” data structure and to define static routes in separate datafill.

Configuring a subnet mask

- 1 In the System Management Console, from the navigation pane, Select **Network Data and Mtc > Media Portal Data > Subnet Masks**.
- 2 Click **Add** or select an entry and click **Edit**.
- 3 In the Add Subnet Masks dialog box, enter the configuration data.
- 4 Click **Apply**.

Deleting a subnet mask

- 1 Select an entry from the **Subnet Masks** window.
- 2 Click **Delete**.
- 3 Click **Yes** to confirm the delete.

Static routes

Static Routes define the special routing considerations that must be employed to access remote network nodes and network resources. This section is required only for the Border Control Point. The Static Routes entity contains the static routes entries that must be populated on the BladeCenter T-based BCP as the BCP comes into service.

This section applies only to the BladeCenter T-based BCP. For more information, see “[Configuring a static route](#)” on page 44.

Configuring a static route

Use the following procedure to add or edit a Static Route entry.

- 1** In the System Management Console, from the navigation pane, select **Network Data and Mtc > Media Portal Data > Static Routes**.
- 2** Click **Add** or select an entry and click **Edit**.
- 3** In the Add Static Routes dialog box, enter the configuration data.
- 4** In the Add Static Routes dialog box, provide a Static Route Name to uniquely identify this static route.
- 5** From the Gateway drop-down list, select the gateway that can route to the relevant remote network.
- 6** From the Destination Network (External Node) drop-down list, select the remote network.
- 7** From the Destination Subnet Mask drop-down list, select the network mask to specify the extent of the remote network.
- 8** Click **Apply**.

Deleting a static route

- 1** Select an entry from the **Static Routes** window.
- 2** Click **Delete**.
- 3** Click **Yes** to confirm the delete.

OAM profiles

The OAM Profiles folder of the configuration view organizes operations support system (OSS) information and log, operational measurement (OM), and information about accounting record format.

OSS server

Use the OSS server to send alarms, logs, OMs, and accounting record information to a northbound OSS, which is the OSS destination. Open the OSS server window by selecting Network Data and Mtc > OAM Profiles > OSS Server from the configuration view of the System Management Console.

Before configuring an OSS server, you must add the IP address for the server in the Addresses window. To perform operations in the OSS Server window, you must have OssProfileService privileges.

After you create an OSS Server profile, you associate it with a Name and an Address. After you create the profile, you can associate it with FTP Push profiles and SNMP Manager profiles.

Record format

The record format folder organizes the formatting of logs, OMs, and accounting record formats preferred by operating company personnel.

Configuring a log record format

To configure log record formats, you must have FPOssProfileService privileges.

- 1 Select **Network Data> OAM Profiles > Record Format > Log Record Format** from the configuration view.
- 2 Click **Add** or select an entry and click **Edit**.

- 3 In the Log Record Format dialog box, enter the configuration data.

Table 3 Log record format configuration

Field	Value	Description
Name	string, 1 to 32 characters	This field identifies this profile. This value is used to create a Format Path for log reports, for example, MCPO, std., or scc2.
Type	STD, MCP, or SCC2	STD is Nortel standard format. MCP is an extension of STD and offers log identifiers that are longer than four characters, as well as long lines. SCC2 is a Telcordia standard format.
Ecore	true or false	If the log format is STD or SCC2 and this parameter is configured to true, the log header information includes a field that identifies the originating stream. For example, the originating stream could be identified as a network element instance.

- 4 Click **Apply**.

Configuring an OM record format

To configure OM record formats, you must have FPOssProfileService privileges.

- 1 In the System Management Console, from the configuration view, select **Network Data and Mtc** > **OAM Profiles** > **Record Format** > **OM Record Format**.
- 2 Click **Add** on the OM Record Format window.
- 3 In the Add OM Record Format dialog box, specify a name for the format, such as comma-separated value (CSV).
- 4 Click **Apply**.

Configuring an Accounting record format

To configure accounting record formats, you must have AMOssProfileService privileges.

- 1 In the System Management Console, from the configuration view, select **Network Data and Mtc > OAM Profiles > Record Format > Accounting Record Format**.
- 2 Click **Add** or select an entry and click **Edit**.
- 3 In the Accounting Data Format dialog box, enter a **Name** for the format, such as acct.
- 4 Select MCPV3 or MCPV4 for the **Type**.
- 5 Click **Apply**.

File Type

The File Type folder contains configuration data for all OSS file types, such as FLATFILE, MCP3IPDRXML, or MCP4IPDRXML. FLATFILE is an ASCII file type and lines are terminated only by a carriage return. MCP3IPDRXML and MCP4IPDRXML formats are for accounting record formats. To perform operations with File Type data, you must have OssProfileService privileges.

Adding a file type

- 1 In the System Management Console, from the configuration view, select **Network Data and Mtc > Profiles > File Type**.
- 2 Click **Add** on the File Type window.
The Edit button is available, but you cannot modify existing File Type configuration data. The Add File Type dialog box opens.
- 3 In the Add File Type dialog box, enter the configuration data.

Table 4 File type configuration

Field	Value	Description
Name	string, 1 to 32 characters	This value identifies this file type and is needed to configure the format path.
Type	FLATFILE, MCP3IPDRXML, MCP4IPDRXML	FLATFILE is an ASCII format with lines terminated by a carriage return. MCP3IPDRXML and MCP4IPDRXML are accounting record formats that use XML to record Internet protocol detail record (IPDR) information.

Table 4 File type configuration

Field	Value	Description
Rotation rule	string	<p>This creates a rule for closing active files and opening new files. Rules are based on time (interval or a specific hour and minute) and optionally by size (in kilobytes):</p> <p>EVERY n AT hh:mm AM PM OR SIZE m</p> <p>EVERY n - This keyword indicates to rotate a file at a specific interval in minutes, such as 60.</p> <p>AT hh:mm AM PM - This keyword indicates to rotate a file at a specific time each day, such as 06:00 AM.</p> <p>OR SIZE m - This keyword modifies the rule so that a file can be rotated before the interval expires or before the specified time if the file reaches the size specified in kilobytes, for example, SIZE 200.</p>
Retention in day	integer, 1 to 7	This value indicates the number of days to retain the files.
Retention enabled	true or false	This value indicates if files must be retained, the number of days specified in Retention in day, or if the Retention in day value must be ignored and all files older than seven days must be deleted.
Compression	true or false	This value indicates if the System Manager must record the files in a compressed format.

4 Click **Apply**.

Format path

The Format Path folder organizes configuration data for log, OM, and accounting records. In this folder, configuration data is entered to associate the format configured in Record Format with a File Type to create a Format Path. An administrative role with FPOssProfileService privilege is needed to work with the log and OM formats.

Configuring a log format path

- 1 In the System Management Console, from the configuration view, select **Network Data and Mtc** > **OAM Profiles** > **Format Path** > **Log Format Path**.
- 2 Click **Add** or select an entry and click **Edit**.

- 3 In the Log Format Path Profile dialog box, enter a name, and then select a **Data Format** and **File Type**.

The options for Data Format and File Type depend on information previously entered for Log Record Format and File Type. For example, enter the name mcp-file if the Data Format is mcp and the File Type is file.

- 4 Click **Apply**.

The Log Format Path Profile dialog box closes and an entry appears in the Log Format Path window. Use this data to configure the Standard Log Stream for the System Manager or a Fault Performance Manager.

Configuring an OM format path

- 1 In the System Management Console, from the configuration view, select **Network Data and Mtc** > **OAM Profiles** > **Format Path** > **OM Format Path**.
- 2 Click **Add** or select an entry and click **Edit**.
- 3 In the OM Format Path Profile dialog box, enter a name, and then select a **Data Format** and **File Type**.

Options for Data Format and File Type depend on previous configuration data. For example, enter a name of csv-file if the Data Format is CSV and the File Type is file.

- 4 Click **Apply**.

The OM Format Path Profile dialog box closes and an entry appears in the OM Format Path window. Use this data to configure the Standard OM Stream for the System Manager or a Fault Performance Manager.

Configuring an accounting format path

To configure an accounting format path, you must have AMOssProfileService privileges.

- 1 In the System Management Console, from the configuration view, select **Network Data and Mtc** > **OAM Profiles** > **Format Path** > **Accounting Format Path**.
- 2 Click **Add** or select an entry and click **Edit**.

- 3 In the Accounting Format Path Profile dialog box, enter a name, and then select a Data Format and File Type.

Options for Data Format and File Type depend on previous configuration data. For example, enter a name of mcp4-ipdr4 if the Data Format is mcp4 and the File Type is ipdr4.

- 4 Click **Apply**.

The Accounting Format Path Profile dialog box closes and an entry appears in the Accounting Format Path window. Use this data to configure the Standard Accounting Stream for an Accounting Manager.

FTP Push

The FTP Push section of the configuration view organizes profiles for transferring logs, OMs, and accounting records from the System Manager or Fault-Performance Manager to an OSS server. Before you create an FTP Push profile, you must configure the OSS Server.

After you create an FTP Push profile, you can configure the System Manager and Fault-Performance Manager network elements to use the FTP Push profile for transmitting logs and OMs by associating the FTP Push profile with an FTP Push Log Stream or an FTP Push OM Stream.

You can configure Accounting Manager network elements to use the FTP Push profile for transmitting accounting records by associating the FTP Push profile with an FTP Push Accounting Stream.

To work with FTP Push, you must have OssProfileService privileges.

Creating an FTP Push profile

- 1 In the System Management Console, from the configuration view, select **Network Data and Mtc** > **OAM Profiles** > **FTP Push**.
- 2 Click **Add** or select an entry and click **Edit**.

3 In the FTP Push Profile dialog box, enter the configuration data.

Table 5 FTP Push profile configuration

Field	Value	Description
Name	string, 1 to 32 characters	Enter a name to identify this profile. This value is needed to associate this profile with an FTP Push log, OM, or accounting stream.
Server	drop-down menu selection	Select a configured OSS Server from the drop-down menu. An OSS Server must be configured before performing this procedure.
Root Directory	string	Enter the destination directory on the OSS server to place records. This directory must already exist on the OSS server. The transferred files are organized further by directory structure. See Pushed file directory structure.
User ID	string	Enter a valid user account for the OSS server.
Password	string	Enter the password for the account on the OSS server.
Confirm Password	string	Repeat the password for the account on the OSS server.
Enabled	checkbox	Click to enable/disable FTP Push.

4 Click **Apply**.

Pushed file directory structure

During the transfer of records, the System Manager, Fault-Performance Manager, or Accounting Manager opens an FTP session to the root directory on the OSS server (as specified by the Root Directory parameter). The file and directory structure organizes the records on the OSS server:

<Root Directory>/oss/<stream>/MCP_9.1/<ne>/<monitored_nes>

- Root Directory—This is the value defined for the Root Directory parameter.
- stream—This value specifies the type stream: log, om, or acct.

- `ne`—This identifies the network element instance that gathered the data, such as `SM_x`, `FPM_x`, or `AM_x`.
- `monitored_nes`—Directories are created for each network element instance that is monitored by this System Manager, Fault-Performance Manager, or Accounting Manager.

For example, if System Manager instance 0 (SM_0) is responsible for collecting logs from Accounting Manager instance 0 (AM_0), and the records are transferred, the log files are placed in the following location:

`.../oss/log/MCP_9.1/SM_0/AM_0/...`

SNMP Manager

Network administrators can integrate alarms generated by MCS-managed network elements into the current Network Management Layer (NML) manager.

Alarm-generating events generate reports that go to the SNMP (Simple Network Management Protocol) Manager registered with the system. These event reports are called traps. To perform operations with SNMP Manager data you must have `SnmpProfileService` privileges.

To start forwarding traps to an existing Network Management Layer (NML) manager, complete the following procedure and then configure the System Manager and all Fault-Performance Managers to use this SNMP Manager profile.

Adding an SNMP manager

- 1 In the System Management Console, from the configuration view, select **Network Data and Mtc** > **OAM Profiles** > **SNMP Manager**.
- 2 Click **Add** or select an entry and click **Edit**.

3 In the Add SNMP Manager dialog box, enter the configuration data.

Table 6 SNMP manager configuration

Field	Value	Description
Name	string, 1 to 32 characters	This field identifies the SNMP Manager profile. This value is used to associate this SNMP Manager profile with the System Manager or a Fault-Performance Manager.
Community	string	This field indicates the community string that the SNMP trap daemon on the OSS server is configured to accept.
Server	drop-down	Select a configured OSS server.
Trap Port	integer	This field identifies which port the traps should be sent to. This value must match the configuration of the SNMP daemon on the OSS server.

4 Click **Apply**.

Server configuration and maintenance

The topics in this chapter include:

- “[Server configuration and management overview](#)” on page 55
- “[Server configuration](#)” on page 56
- “[Server performance statistics](#)” on page 58

Server configuration and management overview

The addition of new servers and server configuration typically occurs during installation and commissioning. The number, type, and redundancy of servers depends on the specific network configuration.

Servers host the following network element applications:

- System Manager
- Database Manager
- Border Control Point (formerly known as RTP Media Portal)
- Fault Performance Managers
- Accounting Managers
- Session Managers
- Provisioning Managers
- Personal Agent Managers
- IP Client Managers
- UFTP Servers



Note: These network element applications are deployed on managed servers. However, many network element applications are coresident on a single server. For example, a System Manager server can host one instance of the System Manager and one instance of an Accounting Manager.

Server configuration

To perform operations with server data, you must have PhysicalServerService, PhysicalSiteService, IPAdddressService, and SnmpProfileService privileges.

Configuring a server.



Note: If you modify an operational server, you affect services deployed on that server.

- 1 In the System Management Console, from the configuration view, select **Servers**.
- 2 Click **Add** or select an entry and click **Edit**.
- 3 In the Server dialog box, enter the configuration data.

Table 7 Server configuration data

Field	Value	Description
Server Name	string, 1 to 6 characters	This field indicates the name of the server, for example, EMS1. This value is used to associate the network element application with the server.
Long Server Name	string, 1 to 32 characters	This field indicates the long name of the server, for example, EMS1Server.
Physical Site	drop-down	Select the location of the server.
Interface 1	drop-down	Select the Logical Name of the IP address for this server.
Interface 2 (mgmt)	drop-down	This optional field is used to configure a management LAN. If configured, all northbound OAM feeds are sent over this interface.
LOM Server	drop-down	This optional field specifies the Lights Out Management server for a server.
LOM Server Port	port number	This optional field specifies the port number for the Lights Out Management server.

Table 7 Server configuration data

Field	Value	Description
Operating System	drop-down	This field is used for SNMP polling. If this field is configured to windows, memory information will not be polled from the server. This field must not be configured to windows. This field is also used to determine file paths.
Server Type	drop-down	Use this field to specify the server type: Bladeserver, CC3310, or Other.
SNMP Profile	drop-down	Select the name of an SNMP profile. Ensure that the operating system SNMP daemon is configured to match the defined SNMP profile.
Host Name	string, 1 to 32 characters	This parameter identifies the hostname of the server.

4 Click **Apply.**

Use the new data to configure a network element instance.

Deleting a server

You must delete all of the hosted network elements that are deployed on the server before you delete the server. If you attempt to delete a server that has services deployed on it, the system rejects the request and indicates that the server is associated with NEInstanceData.

- 1 In the System Management Console, from the configuration view, select **Servers**.
- 2 From the **Servers** window, select the <server> entry.
- 3 Click **Delete**.
- 4 Click **Yes** to confirm the delete.

Server performance statistics

After you enter server configuration data through the System Management Console, one of the parameters is SNMP Profile. To monitor the performance statistics for the server, you must use the System Management Console to start the server monitor. Before the monitor starts, a grey down arrow icon is associated with the server in the Logical and Physical View windows. After the monitor starts, a green, yellow, orange, or red dot indicates the status of the server hardware.

Monitoring a server

- 1 In the System Management Console, from the configuration view, select **Servers > <server_name> > Monitor**.

The Monitor window for the server appears in the work area. If the monitor is not running, the status line at the bottom left of the monitor window indicates “The server monitor is not running.”

- 2 Click **Start Monitor** to collect statistics for the server.

The status line changes to indicate “The server monitor is running.”

The system stores these statistics on a disk, on the server that hosts the System Manager. To view these records, configure an FTP Push job, and then configure the System Manager FTP Push OM Stream to use the FTP Push job.

Configuring server alarm thresholds

To configure server alarm thresholds you must have ServerMonitorConfigService privileges.



Note: If the monitor is running and no statistics appear on the monitor window, check the Logical or Physical View window for a major SRVR101 alarm against the server. This alarm indicates that the SNMP daemon on the server is not responding. Verify that the server is running, and then verify the configuration data related to the SNMP Profile associated with the server.

You can configure thresholds for CPU, memory, disk, and interface usage from the Monitor window by clicking Configure Thresholds.

- 1 In the System Management Console, from the configuration view, select **Servers > <server_name> > Monitor**.
- 2 In the Server Monitor Alarm Threshold Configuration window, modify the thresholds by changing the threshold values, or by enabling and disabling the alarm thresholds.
Enter new values to configure different thresholds. To remove alarms for exceeding thresholds, deselect the check box next to each item.
- 3 Click **OK**.

Database configuration and management

The topics in this chapter include:

- [“Viewing the database monitor status” on page 61](#)
- [“Configuring resource thresholds” on page 62](#)

You configure and deploy the database when you install and commission it. After you commission the database, the only database operation you perform from the System Management Console is monitoring the database.

Viewing the database monitor status

The database monitor indicates the capacity, disk space used, and status of the database. To perform this procedure, you must have DBMonitorService privileges.

1 In the System Management Console, from the configuration view, select **Database > mcpdb > Monitor**.

2 In the mcpdb Monitor window, select instance 0 or 1 and click **Monitor**.

The mcpdb_x Database Instance Monitor window opens. The Replication tab appears in replicated database configurations only.

3 Check the status line at the bottom of the Monitor window.

The status should indicate “The database instance monitor is running.”

4 If the database instance monitor is not running, click **Start Monitor**.

Configuring resource thresholds

To perform this procedure you must have DBMonitorConfigService privileges.

Use the following procedure to configure thresholds for the database monitor control, after a DBMN401 alarms occur.

- 1** In the System Management Console, from the configuration view, select **Database > mcpdb > Monitor**.
- 2** In the mcpdb_x Database Instance Monitor window, click **Configure Thresholds**.

The DB Monitor Alarm Threshold Configuration window appears. The default thresholds are 80 for Minor, 90 for Major, and 100 for Critical.

- 3** Select each threshold to enable for alarm, and configure a threshold.
- 4** Click **OK**.

Network element configuration and management

The topics in this chapter include:

- “Network element configuration overview” on page 63
- “Network element configuration” on page 63
- “Network element software updates” on page 69
- “Network element management” on page 71
- “MCS system without a BCP” on page 73
- “MAS OAM fault integration” on page 74
- “IPCM profile” on page 75

Network element configuration overview

Administrators add, configure, and manage most network elements by using the System Management Console. For network element specific details, see the individual network element guides. For a list of network element documents see “Related publications” on page 17.

Add the System Manager and Database Manager (Databases in the configuration view) manually, without the use of the System Management Console. However, you can use the System Management Console to monitor both.

Network element configuration

You can add, configure, and manage network elements, by using the System Management Console. Add the System Manager network element manually. The System Manager must be operational before administrators can connect with the System Management Console.

The network elements you can add to a specific server depend on the system architecture and operational requirements. Refer to the individual network element guides for specific details related to network element configuration.

The following procedures are generic and do not apply to any specific network element application. For specific configuration details and service property descriptions, see the individual network element guides. For a list of the related network element guides, see “[Related publications](#)” on page 17.

Adding a network element

To add a network element you must have NEService privileges.

- 1 In the System Management Console, from the configuration view, select **Network Elements > <ne_type>**.

A window for the network element type appears in the work area. Existing network elements, of this type, are indicated by a row in the window.

- 2 In the network element window, click **Add**.
- 3 In the Add window, enter the configuration data.

Different network element types require different configuration data. For configuration issues and property descriptions, see the network element-specific guides. For help with property descriptions, move the pointer over the property name.

- 4 Click **Apply**.

The Add window closes and an entry appears in the network element type window. The network element appears in the configuration view, but it does not have any servers or software associated with it yet.

- 5 In the configuration view, expand the network element so that the newly configured element is visible, and select **Instance**.

The network element instance window appears in the work area.

- 6 Click **Add** to add an instance of this network element and associate the instance with a server.

7 In the Add Instance dialog box, use the drop-down menus to associate a server, a software load, and an engineering profile with the instance.

The engineering profile controls the initial size of the Java Virtual Machine and establishes engineering parameters appropriate for the hardware capabilities of the server.

8 Click **Apply** on the add instance dialog box.

9 If the network element offers fault tolerance, and the network architecture is designed for a redundant unit, repeat steps 6 and 7 for the second unit.

10 From the configuration view, select NE Maintenance for the newly created network element.

The Maintenance window for the network element appears in the work area. The state is CONFIGURED and the network element does not provide service yet.

11 In the Maintenance window, select an instance and click **Deploy**.

Software transfers from the System Manager to the server associated with the selected network element instance. The instance changes from CONFIGURED to DEPLOYING. After deployment is complete, the instance changes to OFFLINE.

12 If the network element is fault tolerant, select the other instance and click **Deploy** again.

13 Select an instance and click **Start** on the Maintenance window.

The instance completes the following state changes:

- OFFLINE to STARTING: Clicking the Start button causes this transition.
- STARTING to CONNECTED: The instance has communication with the System Manager.
- CONNECTED to INITIALIZING: Bootstrapping is complete and subsystems on the instance are initializing.
- INITIALIZING to STANDBY: If the network element is fault tolerant, and the other instance is active, this instance remains in STANDBY until a switch of activity.
- STANDBY to ACTIVATING: This instance must become the active instance.
- ACTIVATING to ACTIVE: This instance is now providing service.

The time required to complete the installation and activation depends on the network element type and the hosting server.

Network element modification

Network elements can be modified in several ways:

- modify a whole network element: Use this option to modify the base port of a network element application, to associate a different Fault-Performance Manager with the network element, and to modify many options that are specific to each network element type.
- modify a network element instance: Engineering parameters for each network element instance can be altered.
- modify Configuration Parameters: Use this option to modify operating parameters that can be modified while the network element is in service. The changes apply to all network element instances of the network element.



Note: Installation of a network element on a server can generate a threshold alarm that indicates high CPU usage. The alarm clears after the installation is complete.

Modifying a whole network element

The properties for each network element type differ. Refer to the specific network element documentation for information about the properties. To perform this procedure you must have NEService privileges.

- 1 In the System Management Console, from the configuration view, select **Network Elements > <ne_type>**.

A window for the network element type appears in the work area.

- 2 Select the entry for the network element to modify and click **Edit**.
- 3 In the Edit dialog box, modify the configuration data.
- 4 Click **Apply**.

A warning dialog box opens if other network elements need to be restarted as a result of the configuration change. Otherwise, the Edit dialog box closes and the system applies the data change to all instances of the network element immediately.

Modifying a network element instance.



Caution: Before performing this procedure, contact your next level of support. Engineering parameters must not be modified in the field. Modifying the engineering parameters for a network element instance can reduce the performance and services of the network element.

Any changes require a manual restart of the network element instance to take effect, and the changes apply to only a single network element instance; for redundant network elements, the change must be made to other network element instances too. To perform this procedure you must have NEInstanceService and EngParmService privileges.

The only appropriate modification to an NE Instance is to the load during an upgrade, or to move the NE Instance to a different server.

- 1 From the configuration view, select **Network Elements > <ne_type> > <ne> > Instance**.

The Instance window appears in the work area.

- 2 Select the network element instance to modify from the Instance window and click **Edit**.

The Edit Instance dialog box appears.

- 3 Click **Advanced** on the Edit Instance dialog box.

The Edit Eng Params window appears in the work area. Engineering parameters are organized by Parm Group.

- 4 From the drop-down menu, select the Parm Group to modify.

The engineering parameters appear on the Instance Eng Params window.

- 5 From the Instance Eng Params window, select the engineering parameter to modify, and click **Edit**.

The Edit Eng Params dialog box appears.

- 6 Enter a new value for the engineering parameter.

For help, move the pointer over the parameter.

- 7 Click **Apply**.

- 8 Click **OK** to confirm the warning.

You must manually restart for the changes to take effect. For information on how to perform a manual restart, see the documentation for the particular network element type.

Modifying configuration parameters

Every network element type has some configurable operating parameters. Which parameters can be configured, depends on the network element type. To perform this procedure you must have ConfigParmService privileges.

- 1 In the System Management Console, from the configuration view, select **Network Elements > <ne_type> > <ne> > Configuration Parameters**.
- 2 In the Config Params window, from the drop-down list, select a parameter group.
- 3 Select the parameter to modify and click **Edit**.
- 4 In the Edit Config Params dialog box, enter a new value for the configuration parameter.
- 5 Click **Apply**.

The system validates the new value. If the value is valid, the Edit Config Parm window closes and the configuration parameter updates.

Deleting a network element



Caution: Administrators can delete a network element on a server. However, before you remove any network element, contact your next level of support to determine the potential effect on the system.

To perform this procedure you must have NEService and NEInstanceService privileges.

- 1 In the System Management Console, from the configuration view, select **Network Elements > <ne_type> > <ne> > NE Maintenance**.
- 2 From the Maintenance window, select each network element instance and click **Stop**.

- 3 Click **Yes** to confirm the Stop.

The network element instance state changes to DEACTIVATING, DISCONNECTED, and then OFFLINE.

- 4 From the Maintenance window, select each network element instance and click **Undeploy**.

The network element instance state changes to CONFIGURED.

- 5 From the configuration view, select **Network Elements > <ne_type> > <ne> > Instance**, to view a list of the configured network element instances for this network element.

- 6 From the Instance window, select each entry and click **Delete**.

- 7 Click **Yes** to confirm deletion.

- 8 From the configuration view, select **Network Elements > <ne_type>**.

A window that lists all the network elements of this type appears in the work area.

- 9 Select the network element to delete and click **Delete**.

- 10 Confirm the deletion by clicking **Yes**.

Network element software updates

Administrators can update the software for network elements. The current configuration data is automatically transferred to the updated version, with the exception of any modified engineering parameters. Engineering parameters are configured to factory defaults during a software update. The update can be an upgrade to a new version or a downgrade to a previous software version.

The service impacts of updating network element software vary, depending on the network element involved and the system architecture. For more details, see the individual network element and upgrade guides.

Updating network element software

To perform this procedure, you must have NEInstanceService privileges

- 1 In the System Management Console, from the configuration view, select **Network Elements > <ne_type> > <ne> > NE Maintenance**.

The Maintenance window opens in the work area.

- 2 From the Maintenance windows, select the **STANDBY** instance for redundant network elements, or the only instance for simplex network elements and click **Stop**.

- 3 Click **Yes**, to confirm the Stop.

The network element instance changes to **OFFLINE**.

- 4 From the configuration view, select **Instance** for this network element.

- 5 From the Instance window, select the instance that you just stopped, and click **Edit**.

- 6 In the Edit Instance dialog box, from the Load drop-down list, select the software version to use.

- 7 Click **Apply**.

The Edit Instance window closes and the network element instance changes to **CONFIGURED**.

- 8 In the NE Maintenance window, click **Deploy** to transfer the update software load to the server that hosts the network element.

The network element instance changes from **CONFIGURED** to **OFFLINE**.

- 9 In the NE Maintenance window, click **Start** to run the updated software version and begin providing service.

The network element instance changes through several state changes, starting from **OFFLINE**. If this network element instance is part of a redundant network element, the changes stop at **STANDBY**. If the network element is simplex, the changes stop at **ACTIVE**.

Network element management

Administrators use Start, Stop, and Restart operations to modify the configured properties of network elements. After a network element instance stops, the state changes to OFFLINE and services become unavailable. Starting, stopping, and restarting a network element instance require an administrative role with NEInstanceService privilege.

Stopping a network element

A Stop operation stops the processes of a network element instance and allows for system cleanup prior to shutdown.



Caution: Stopping a network element instance can affect sessions that are in progress.

For all network element types, if the network element is redundant, stopping the STANDBY or HOT STANDBY instance does not affect service; it only causes a loss of redundancy. For more information, see the individual network element guides.

- 1 In the System Management Console, from the configuration view, select **Network Elements > <ne_type> > <ne> > NE Maintenance**.
- 2 From the Maintenance window, select the instance to stop and click **Stop**.
- 3 Click **Yes**. to confirm the Stop.

The network element instance changes to OFFLINE.

Starting a network element

A Start operation starts the processes of a network element instance on a server. Software must be deployed to the server before the network element instance can be started. A network element instance in the state of OFFLINE has software deployed and is stopped. A network element instance in the state of CONFIGURED does not have software deployed

- 1 In the System Management Console, from the configuration view, select **Network Elements > <ne_type> > <ne> > NE Maintenance**.

The Maintenance window appears in the work area.

- 2 From the Maintenance window, select the instance to start and click **Start**.

The network element instance changes from OFFLINE, through a series of states, and finishes at ACTIVE. If this is a redundant unit and the other unit is ACTIVE already, this unit finishes at STANDBY or HOT STANDBY.

Restarting a network element

The Restart operation performs a combined stop and start. During the period of the restart, the network element instance does not provide service. There is no difference between performing a restart, or stopping and then starting a network element instance.

- 1 In the System Management Console, from the configuration view, select **Network Elements > <ne_type> > <ne> > NE Maintenance**.
- 2 From the Maintenance window, select the instance to restart, and click **Restart**.
- 3 Click **Yes** to confirm the warning.

The network element instance changes from ACTIVE, STANDBY, or HOT STANDBY, through a series of states, and finishes at ACTIVE. If this is a redundant unit and the other unit is ACTIVE already, this unit finishes at STANDBY or HOT STANDBY.

Killing a network element

The Kill operation stops the MCS software that is running on the network element instance; the operating system continues to run. The instance terminates immediately and there is no system cleanup prior to shutdown. Use this operation if stop and restart do not resolve the problem.

- 1 In the System Management Console, from the configuration view, select **Network Elements > <ne_type> > <ne> > NE Maintenance**.
- 2 From the Maintenance window, select the instance to restart, and click **Kill**.
- 3 Click **Yes** to confirm the warning.

The network element instance changes to OFFLINE.

MCS system without a BCP

If the MCS system does not include a Border Control Point (BCP), you must configure the following Session Manager parameters from the MediaPortal Parm Group to true:

- `DisableFirewallPortalStrategy`
- `IgnoreempRules`

For more information, see *Session Manager Fundamentals* (NN42020-107).

Configuring Session Manager parameters

To perform this procedure you must have ConfigParmService privileges.

- 1 In the System Management Console, from the configuration view, select **Network Elements > Session Managers > SESM<instance> > Configuration Parameters**.
- 2 In the Config Params window, from the drop-down list, select **MediaPortal**.
- 3 Select the parameter to modify and click **Edit**.
- 4 In the Edit dialog box, from the Value list, select **true**.
- 5 Click **Apply**.

MAS OAM fault integration

The Media Application Server (MAS) Operations, Administration and Maintenance (OAM) fault integration feature provides the integration of the log and alarm notifications from MAS into the MCS Fault and Performance Manager (FPM). With this feature, administrators can monitor the MAS from the System Management Console (SMC). On the SMC you add a MAS as a Monitored Element with a name and IP address.

To make the MAS alarms and logs viewable on the SMC, you must configure the IP address of the Fault and Performance Manager in the MAS Console. You must also enable the Simple Network Management Protocol (SNMP) on the MAS. For more information, see *Media Application Server Planning and Engineering* (NN42020-201) or *MAS Installation and Upgrades* (NN42020-307).

Configuring a MAS to FPM association

The FPM associated with a particular MAS must correspond to the FPM addressing provisioned on that MAS, and to the SNMP port and community string for that MAS.

- 1** Start the **System Management Console**.
- 2** In the configuration view, expand **Network Elements**.
- 3** Under **Network Elements**, select **Media Application Servers**.
- 4** In the Media Application Servers window, select the MAS.
- 5** Click **Edit** and enter the corresponding **Address**, **FPM**, **SNMP Profile**, and **SIP Port** for that MAS.
- 6** Click **Apply**.

IPCM profile

With the IPCM profile feature, you can upgrade IP Phones 2004 that have the Unistim firmware to SIP firmware. All configuration for the SIP phones (such as the domain name, IP address of the session manager, and the Trivial File Transport Protocol (TFTP) server IP address) is uploaded during the upgrade process.

Use the System Management Console to configure the required MCS parameters. For more information about the IPCM profile feature, see *IP Client Manager Fundamentals* (NN42020-106) and *SIP Phone Commissioning* (NN42020-302). For information about how to verify the current firmware load, see “[Verifying firmware codes](#)” on page 77.

This feature requires a TFTP server for firmware updates to the phones. After the upgrade to the SIP firmware, you must perform all updates by using TFTP. This feature also uses a Domain Name System (DNS) server to resolve domain names.

Before you configure this feature, you must add the addresses for the TFTP and DNS servers in the Addresses window. For more information about how to add addresses, see “[Configuring an IP address](#)” on page 36.

IPCM profile configuration

[Table 8 “IPCM profile parameters” on page 75](#) lists the configuration parameters for the IPCM profile feature.

Table 8 IPCM profile parameters

Parameter	Value
S1	Session Manager instance
S2	IPCM instance
TFTP server	Logical name of the TFTP server
DNS server	Logical name of the DNS server

Configuring IPCM profile parameters

Use the following procedure to add a new profile, or to configure the parameters for an existing IPCM profile.

- 1 In the System Management Console, in the Configuration view, expand **Network Elements**.
- 1 Under **Network Elements**, expand **IPCM Configuration**.
- 2 Under **IPCM Configuration**, select **IPCM Profile**.
- 3 In the IPCM Profile window, select the profile that you want to configure.

OR

To add a new profile, click **Add**.

 - 4 In the Edit IPCM Profile window, enter the configuration parameters.
 - 5 Click **Apply**.

IPCM profile server configuration

[“IPCM server parameters” on page 76](#) lists the configuration parameters for an IPCM server.

Table 9 IPCM server parameters

Parameter	Value
Server	IPCM or Session Manager instance
Action	7: Use SIP to connect to the server. 1: Use Unistim to connect to the server.
Port	5060 for the Session Manager 5000 for the IPCM server

Configuring an IPCM profile server

Use the following procedure to add a new IPCM profile server, or to configure the parameters for an existing IPCM profile server.

1 In the System Management Console, in the Configuration view, expand **Network Elements**.

1 Under **Network Elements**, expand **IPCM Configuration**.

2 Under **IPCM Configuration**, select **IPCM Profile Server**.

3 In the IPCM Profile Server window, select the profile that you want to configure.

OR

To add a new profile, click **Add**.

4 In the Edit IPCM Profile Server window, enter the configuration parameters.

5 Click **Apply**

Verifying firmware codes

Use the System Management Console to check the firmware load prior to an upgrade, or to verify the correct telephone firmware is loaded after an upgrade.

1 In the System Management Console configuration view, expand **Network Elements**. > **IPCM Configuration** > **IP Client Managers** > **<IPCM_instance>**.

2 Under **<IPCM_instance>**, select **Configuration Parameters**.

3 In the Parameter Configuration window, from the **Parm Group** list, select Firmware.

[Table 10 “Firmware Codes” on page 77](#) lists firmware codes and corresponding telephone types. Firmware codes that are not listed, are not used or define a firmware string for device emulation; in which case, upgrade is not supported.

Table 10 Firmware Codes

Code	Telephone
FirmwarePhase0x01	IP Phone 2002 Phase 1 IP Phone 2004 Phase 1
FirmwarePhase0x02	IP Phone 2001 IP Phone 2002 Phase 2 IP Phone 2004 Phase 2

Table 10 Firmware Codes

Code	Telephone
FirmwarePhase0x12	IP Phone 2004 Phase 2 SIP transitional firmware
FirmwarePhase0x21	IP Phone 2007
FirmwarePhase0x24	IP Phone 1120E
FirmwarePhase0x25	IP Phone 1140E
FirmwarePhase0x92	IP Phone 2004 with SIP firmware

Media Gateway

This section describes the upgrading of the Media Gateway firmware. You must have a fully-installed and configured Media Gateway before upgrading its firmware.

Upgrade the Media Gateway firmware

**Warning:**

Taking the Media Gateway out of service to perform the upgrade will cause loss of service. All calls that are connected through the gateway are dropped. Schedule the upgrade during a maintenance window.

Upgrade the Media Gateway firmware if the version of firmware on the gateway is different from the one listed in the *MCS Release Notes*. To upgrade, perform the following procedures:

- “[Checking the Media Gateway firmware version](#)” on page 78
- “[Upgrading the Media Gateway firmware](#)” on page 79

Checking the Media Gateway firmware version

Using the System Management Console,

- 1 In the Config tree, select **Network Elements > AudioCodes Gateways**.
The window shows all the configured Media Gateways.
- 2 Select a gateway and click **-/+**.

The Edit AudioCodes Gateway window appears.

- 3 View the contents of the **Software load** menu. If there are no newer loads, then the Media Gateway is up-to-date.

Upgrading the Media Gateway firmware

Using the System Management Console,

- 1 In the Config tree, select **Network Elements > AudioCodes Gateways**.

The window shows all the configured Media Gateways.

- 2 Select a gateway and click **-/+**.

The Edit AudioCodes Gateway window appears.

- 3 Select the new firmware load in the Software Load field.

- 4 If you want to continue to use your existing configuration, select **Use existing config**.



Warning:

Upgrading the Media Gateway loads a new configuration file. Any existing configuration done using the Media Gateway Web interface will be lost unless you select Use existing config.

- 5 In the Config tree, select **Network Elements > AudioCodes Gateways**.

- 6 Expand the gateway handled in step 2.

- 7 Click **Gateway Maintenance**.

The AudioCodes Gateway Deployment window appears. The Gateway appears in the CONFIGURED state.

- 8 Click the gateway entry.

- 9 Click **Deploy**.

The firmware loads onto the gateway. When completed, the gateway changes to the DEPLOYED state.

- 10 Repeat steps 2 through 9 for each gateway in the network.

Alarm browser

The topics in this chapter include:

- [“Alarm browser fundamentals” on page 81](#)
- [“Alarm browser operations” on page 83](#)

For descriptions of alarms that are generated by the managed elements, see *Alarm and Log Reference* (NN42020-703). To view alarms from the alarm browser, you must have AlarmQueryService privileges. To acknowledge or clear alarms, you must have AlarmMtcService privileges.

Alarm browser fundamentals

System elements that are operating can raise and clear alarms. After a fault occurs, the managed element generates an alarm and sends it to the System Manager component. Use the System Management Console alarm browser to view alarms.

After an alarm occurs, it is added to a list of active alarms. The alarm remains on the active list until it is resolved. After you resolve the problem, the alarm clears and disappears from the list of active alarms. For alarm information displayed in the browser, see the section [“Alarm information displayed in the browser” on page 82](#).

The alarm browser has two main areas: the Alarm Display and Alarm Details area. The Alarm Display area shows a list of all current active alarms and their details. The Alarm Details area displays text describing a single alarm that is selected in the display. The System Management Console displays all logs and alarms in MCP format.

[Table 11 “Alarm browser functions” on page 82](#) describes available alarm browser functions.

Table 11 Alarm browser functions

Function	Description
Start Stop Auto Refresh	The System Management Console begins polling the service components to enable the alarm browser to dynamically update the alarm status. The elements are polled approximately every 5 seconds if this function is enabled.
Refresh	Updates the Alarm Display area with the current alarms and their status.
Clear Details	Clears the text from the Alarm Details area of the alarm browser.
Remove Cleared Alarms	Removes cleared alarms from this alarm browser display. Cleared alarms are indicated by a trash can icon in the CLR column.

Alarm information displayed in the browser

You can start the Alarm browser from

- the alarm browser icon after you select a network element from the configuration view pane
- the alarm browser icon after you select a server from the configuration view pane
- the physical and logical view windows after you select a network element or server icon

There are two ways to view alarms for the database application. One way is to open the logical view window, expand the Logical DBs entry, and then select mcpdb_0 or mcpdb_1. Another way is to open the physical view window, expand the server or servers and DBInstance that host the database, and then select mcpdb_0 or mcpdb_1. After you select an instance, the alarm browser icon becomes available.

The alarms that appear in the alarm browser depend on the network element or server that you select from the configuration view pane.

For example, if you select a server, the alarm browser shows alarms for the server only, not for the network elements deployed on the server.

If you select a network element, the browser shows alarms generated by the network element application only, not alarms for the server or other applications on the server. Administrators can start more than one browser, allowing them to view alarms for specific elements separately.

[Table 12 “Alarm details” on page 83](#) lists the information that is displayed for alarms in the alarm browser. An asterisk (*) indicates information that is available only after you select the alarm.

Table 12 Alarm details

Alarm attribute	Description
Alarm Name	the name of the alarm
Timestamp	the time at which the alarm was raised
Severity	the severity assigned to the alarm
ShortFamilyName	family name of the managed object that originated the alarm
FaultNumber	the identifier number of the alarm
Acknowledged	indicates whether the alarm has been acknowledged by an administrator
Probable Cause *	a brief indication of the probable cause
Description *	a full text explanation of the alarm condition
Corrective Action *	suggested course of action for correcting the condition

Alarm browser operations

The alarm browser displays all the alarms that originated from the network element or server selected. You can start more than one browser to view alarms for specific elements separately.

For more information about working with alarms, see the following procedures:

- [“Viewing alarms” on page 84](#)
- [“Viewing alarm details” on page 84](#)
- [“Sorting alarms based on alarm attribute” on page 84](#)

- “[Copying alarm information](#)” on page 85
- “[Clearing alarms](#)” on page 85
- “[Refreshing alarm information](#)” on page 85

Viewing alarms

The alarm browser displays all of the alarms that originated from services and servers under the selected element in the configuration view pane.

- 1 In the System Management Console, from the configuration view, select a network element or server.
- 2 On the toolbar, click the alarm browser icon.

The alarm browser opens and the Alarm Display area shows all the alarms associated with the selected network element or server.

Figure 5 Alarm browser icon



Viewing alarm details

- 1 From the Alarm Display area of the alarm browser, select an alarm entry.
Information about the alarm appears in the Alarm Details area.
- 2 To refresh the Alarm Details area, click **Refresh**.

Sorting alarms based on alarm attribute

You can sort the order of the alarms in the browser according to any of the attributes of the alarm format. By default, alarms appear in order of severity, with the most severe alarm listed at the top of the upper panel.

- 1 Click a column header in the upper panel of the alarm browser.
The alarms appear either in alphabetical or numerical order, depending on the alarm attribute.
- 2 Click the column header a second time to reverse the order.

Copying alarm information

You can copy alarm information (such as one or more alarm rows from the display, or alarm details text) to the PC clipboard, and then paste it into other PC-based documents, such as e-mail.

- 1 From the Alarm Display area of the alarm browser, select an alarm entry.
- 2 In the Alarm Details section, click and highlight the alarm details text using the pointer.
- 3 Press **Ctrl+c**.
The text copies to the PC clipboard.
- 4 Position the cursor in another PC application document, and press **Ctrl+v** to paste the text.

Clearing alarms

You can clear some alarms manually. After you select one of these alarms in the alarm browser, the **Clear** button becomes active.

- 1 From the Alarm Display area of the alarm browser, select an alarm.
- 2 If the **Clear** button is active, and you have noted the corrective action suggested in the Alarm Details area, click **Clear**.
- 3 Click **Refresh** to clear the Alarm Details area and remove the alarm entry from the upper panel of the alarm browser.

Refreshing alarm information

After you click the Refresh button, the system updates the alarms in the browser to show the current system faults.

To refresh the alarm information, click **Refresh**.

Log browser

The topics in this chapter include:

- [“Log browser fundamentals” on page 87](#)
- [“Log browser operations” on page 88](#)

For more information about logs generated by the managed elements, see *Alarm and Log Reference* (NN42020-703). To view log reports from the log browser you must have LogStreamService privileges.

Log browser fundamentals

The system uses logs to record information related to an event so that the information can be analyzed at a later time. Every log event is captured and archived to disk by the Fault-Performance Manager that is assigned to the network element or server. At the same time, the log stream is available to the System Manager for display at the System Management Console.

The log browser has the following limitations:

- Only current log reports are available for viewing at the System Management Console.
- The log browser displays 10 000 characters of data, approximately 50 log reports. Old logs are removed as new logs are added.
- Logs for servers are not available for display.

You cannot use the log browser to view current logs for servers, to view archived logs, to configure an FTP Push profile and associate it with the FTP Push Log Stream for the System Manager or Fault-Performance Manager, or to view the archived logs from an OSS.

A live stream of logs (including alarm logs) is reported to the configured Fault-Performance Manager (which can be the System Manager) from the generating network element. As the server receives the logs, they are saved to the current (.active) log file on the Fault-Performance Manager server. After a configured period of time, or after the file reaches a configured size in kilobytes, the log file is closed and renamed (rotated) to an archived log file and a new active log file is opened.

The log browser displays information for a single network element instance, similar to the way that the alarm browser displays alarms for the selected network element.

Log browser operations

You can start a log browser only after you select a network element from the configuration view pane, the physical view window, or the logical view window. You can have multiple log browsers open at the same time to monitor multiple components concurrently.

The following functions are available in the log browser:

Table 13 Function buttons in the log browser

Function	Description
Clear	Removes all the existing log text from the window of the log browser.
Lock Scroll/Unlock Scroll	Toggles the scrolling of log text in the window of the current log browser.

The log browser displays all the logs originating from the selected network element. Administrators can start more than one log browser, allowing them to view logs for different components concurrently.

See the following procedures for information about working with logs in the log browsers:

- [“Starting the log browser from the configuration view” on page 89](#)
- [“Starting the log browser from the logical or physical view” on page 89](#)

- “[Clearing log details](#)” on page 89
- “[Saving logs](#)” on page 90
- “[Log file rotation period configuration](#)” on page 90

Starting the log browser from the configuration view

1 In the System Management Console, from the configuration view, select **Network Elements > <ne_type> > <ne>**.

2 On the icon toolbar, click the log browser icon.

The log browser opens. If the selected network element type is redundant, a log browser for each instance appears.

Figure 6 Log browser icon



Starting the log browser from the logical or physical view

1 In the System Management Console, from the physical or logical view window, select the network element.

2 Click the log browser icon.

The log browser opens. Unlike a configuration view start, only one log browser opens, and it is for the selected network element instance, regardless of redundancy.

Clearing log details

Only administrators with appropriate privileges can clear log details.

To clear the log text in the browser display, click **Clear**.

Saving logs

You can select text from the log browser window and paste it into other applications.

- 1 Select the log text from the log browser with the pointer, or to select all text, press Ctrl+a.
- 2 Press Ctrl+c to copy the text to the clipboard.
- 3 Position the cursor in another application, and press Ctrl+v to paste the text.

Log file rotation period configuration

You can configure the log rotation interval and file size based on a File Type profile that is configured at the System Management Console. You can create different profiles and assign these profiles for each component, for each server, or at the system level. Typically, a single profile is configured at the system level. For information about configuring File Type profiles, see “[Adding a file type](#)” on [page 47](#).

Dual NIC PCs

With the Dual NIC Support feature, the FPM acts as the server and the SMC as the client. The SMC is registered for log browsing, but the IP address of the SMC host machine is not required.

The Dual NIC PC Support feature also solves potential firewall issues. System Management Console functionality is the same and user intervention is not required.

Operational measurements browser

The topics in this chapter include:

- [“Operational measurements browser fundamentals” on page 91](#)
- [“OM browser operations” on page 92](#)

For descriptions about operational measurements (OM) generated by the managed elements, see *Operational Measurements Reference* (NN42020-704). To view OMs in the OM browser you must have OMQueryService privileges.

Operational measurements browser fundamentals

Operational measurements (OM) provide statistical information about the server operations and performances. OMs are represented by groups, which contain registers (counters and gauges) that provide performance-related data.

There are two types of OMs: active and holding. Active OMs appear as they are reported by the server to the management server/management console. Holding OMs are already archived to files on the Management Server.

Use the OM browser to view both active and holding OMs. The browser displays the OM information for a single server. The active and holding browsers display essentially the same information and operate in the same manner.

The OM browser has two main areas, the OM Display area and the OM Details area. The OM Display area identifies the network element instance, the OM group displayed in the OM Details area, and if the OMs are for the active or holding period. The OM Details area displays the register information of the selected OM group. OMs for non-active services are not always reported. As a result, the OMs for a non-active group sometimes do not appear in the OM browser.

All OM s that appear in the OM browsers display the following common information. All other attributes in the OM Details area are specific to the OM group selected.

Table 14 OM details

Attribute	Description
Instance	This drop-down menu indicates the instance of the network element from which the OM s were collected. If a network element has a second instance and that instance is in service, use the drop-down menu to query the second instance.
OM group	This drop-down menu determines which of the registers are shown in the OM Details area.
Type	This drop-down menu determines whether active OM s or holding OM s are displayed in the OM Details area.
TimeStamp	If active OM s are queried, this field indicates the time the OM s were collected. If holding OM s are queried, this field indicates the end time of the most recent OM collection period.
OM Row	This field is in the OM Details area and identifies a register, such as UFTP2_0:log:Standard or a tuple, such as 0 or 1.

OM browser operations

You can open the OM browser only after you select a network element from the configuration view pane, the physical view window, or the logical view window. You can open multiple OM browsers at the same time to monitor separate network elements.

Starting the OM browser from the configuration view

- 1 From the configuration view, select **Network Elements > <nt_type> > <ne>**.
- 2 Click the OM browser icon in the toolbar.

The OM browser for the selected network element opens. By default, the browser queries Active OMs.

Figure 7 OM browser icon



Starting the OM browser from the physical or logical view

After you select a network element in the logical or physical view pane, the OM browser icon becomes active.

From the physical or logical view, click the **OM browser** icon to open the OM browser.

Viewing register information of a specific OM group

After you select an OM group from the OM Display area, the registers and statistics appear in the OM Details area.

From the OM Display area, select an OM group to view the register information for that OM group.

Saving OM data

OM data cannot be saved from the OM browser.

Configure an FTP Push OM Stream for the System Manager and any Fault-Performance Managers and then view the transferred data.

For more information about configuring FTP Push, see “[FTP Push](#)” on page 50.

Refreshing data in the OM browser

The system updates the OM data according to the interval that is configured for the OfficeTransferPeriod configuration parameter. After the browser is open for an extended period, you can query the latest OM data.

- 1 In the OM browser, from the Type drop-down menu, select **Active** or **Holding**.
- 2 Click **Refresh**.



Note: If you start the OM browser from the physical view window for a specific instance of a network element, such as SM_0, the Instance drop-down list is not available for that OM browser.

OM file rotation period configuration

You can configure the active OM rotation interval and file size based on a File Type profile that is configured at the System Management Console. Different profiles can be created and these profiles can be assigned for each network element or at the system level. Typically, a single profile is configured at the system level. For information about configuring File Type profiles, see the information about rotation rules in “[File Type](#)” on page 47.

OM interval period configuration

You can configure the length of OM interval periods to determine if the active OM period lasts 5, 15, 30, or 60 minutes. After the configured interval, the system collects OMs and moves them to holding status, and a new active OM interval period begins. The OfficeTransferPeriod configuration parameter that controls the interval is configured on a component by component basis. See the information about modifying configuration parameters in “[Modifying configuration parameters](#)” on page 68.

Administrator tools

The topics in this chapter include:

- “User administration” on page 95
- “System Manager password reset” on page 97
- “Role administration” on page 97
- “Viewing and forcing off users” on page 102
- “User password rules” on page 102
- “Database export and import” on page 103
- “Provisioning Client interface” on page 104
- “Message of the day” on page 105
- “HTTP Denial of Service mitigation” on page 106
- “SIP Denial of Service mitigation” on page 109
- “Trusted node configuration” on page 112
- “Overload Engineering parameters” on page 113

User administration

An administrator with sufficient privileges can add, modify and delete System Management Console (SMC) users through the SMC. To perform user administration procedures, you must have SecurityService privileges.

Add new users from the SMC Administration menu, or by using the import method described in “[Importing the password and properties for an SMC user](#)” on [page 104](#).

Adding or modifying an administrator

Before you add an administrator, you must determine the administrative role and password policy to apply to the new administrator.

- 1 From the System Management Console menu bar, select **Administration > User Administration**.
- 2 In the Users window, click **Add**, or select an existing entry and click **Edit**.

Table 15 Administrative role and password policy configuration

Field	Value	Description
User ID string	5 to 16 characters	This value is the account identity, entered by the administrator during log on. Integers are allowed, for example, admin20.
User Name	string	This value records the administrator's first and last names.
Password	string, 4 to 200 characters	All characters are valid.
Password Confirm	string, 4 to 200 characters	This value must match the Password string.
Role	drop-down	Specify the administrative role for this administrator.
Force password change	enabled or disabled	If enabled, the administrator must change the password during the initial log on.

- 3 In the User Account dialog box, enter the data and click **Apply**.

The system validates the configuration data. If the change is valid, the User Account dialog box closes and the Users window updates with the change.

Deleting an administrator

An administrator can delete another administrator from the system. This prevents the deleted administrator from logging in again, but it does not force a logged-on administrator off the system.

- 1 From the System Management Console menu bar, select **Administration > User Administration** from the menu bar.
- 2 From the User window, select the entry for the user and click **Delete**.
- 3 Click **Yes** to confirm the delete.

System Manager password reset

After you add a new user, you can select the option to require password reset. From the Administration menu, select User Administration and use the **Edit** button to open the Edit User Account dialog for the new user. If you select Force password change and click apply, the new Administrator must change the password during the first log on.

Role administration

Administrators who have SecurityService privilege configure roles, and then assign the roles to administrators.

Adding or modifying a role

If you add or modify a role, the effect is immediate because every maintenance or configuration action at the System Management Console initiates a privilege check against the administrator's role.

- 1 From the menu bar, **Select Administration > Role Administration**.
The Roles window appears in the work area.
- 2 Click **Add** or select an existing entry and click **Edit**.
The Role window appears.

- 3 If adding a new role, enter a Role Name.
- 4 Configure the privileges for this role by selecting the check boxes.
- 5 Click **Apply**.

Privileges

The effects of the READ, WRITE, and MTC privileges differ according to the service that is selected, but some generalizations are possible:

- READ: This privilege typically allows you to view, but not modify configuration data.
- WRITE: The WRITE privilege enables READ automatically. The WRITE privilege allows you to add and modify configuration data.
- MTC: The MTC privilege allows you to start and stop services, but does not allow you to change configuration data. Typically you must also have the READ privilege in addition to MTC.

The following table lists the services and the associated descriptions.

Table 16 Services

Privilege	Description
AMOssProfileService	OSS Profile data configuration—distributed to the Accounting Manager (AM)
AlarmMtcService	Acknowledgement/clearing of alarms
AlarmQueryService	Alarm viewing
AMOssProfileService	OSS Profile data configuration—distributed to the Accounting Manager (AM)
AudioCodesNumMapIP2TelService	IPToTelephonyMap configuration
AudioCodesServerService	AudioCodes gateway configuration
AudioCodesServerStateService	AudioCodes gateway state configuration
AudioCodesTrunkService	AudioCodes trunk configuration
AuthenticationService	SessMgr trusted node authorized method configuration
CallAgentService	CS2K Call Agent configuration
ChassisMonitorService	Blade Center Chassis monitoring
ChassisService	Blade Center Chassis configuration

Table 16 Services

Privilege	Description
CipherSuiteService	OAMP SSL/TLS cipher suite configuration
ConfigParmService	Configuration parameters
DBInstanceService	Database instance configuration
DBMonitorConfigService	Database monitor threshold configuration
DBMonitorService	Database instance monitoring
DeviceService	IPCM device maintenance
EndpointMtcService	Endpoint Maintenance configuration/ monitoring
EngParmService	Engineering parameters
ExportImportService	Bulk configuration export/import tools
FPOssProfileService	OSS profile data configuration(distributed to FPM)
FlowSpecCodecService	Video Codec configuration (in Packet Cable Integration->Codec)
FlowSpecService	Video FlowSpec configuration (in Packet Cable Integration->Codec)
GatewayControllerLinkMtcService	Gateway Controller Link Maintenance/ monitoring
GatewayControllerService	CS2K Gateway Controller configuration
GatewayService	Gateway configuration
IPAddressService	IP address configuration
IPCMProfileRefService	Choosing IPCM Profile configuration for an IPCM
IPCMProfileService	IPCM Profile server configuration
InfoElementService	Informational Element configuration
LOMServerService	LOM and Terminal server configuration
LicenseKeyService	License key configuration
LocationServiceMgr	DNS server configuration for the Session Manager
LogicalDBService	Database configuration
LogStreamService	Log viewing
MASService	Media Application Server configuration
MPClusterConfigParmsService	Media Portal Cluster Configuration Params

Table 16 Services

Privilege	Description
MPClusterFaultToleranceService	Media Portal Cluster Fault Tolerance configuration
MPClusterGwcCallSvrService	Media Portal Cluster Gateway Controllers configuration
MPClusterMultiGwy	Multiple Network Gateway Routers configuration for Media Portal Cluster
MPClusterNet2RouteService	Choosing the Net2 Routable Networks configuration for a Media Portal
MPClusterService	Media Portal Cluster configuration
MPClusterSessionMgrService	Media Portal Cluster Session Managers configuration
MPClusterStaticRouteService	Media Portal Cluster Static Routes configuration
MPClusterSvcInstService	Media Portal Cluster Service Instance configuration
MPClusterVlan	Choosing the Vlan topology configuration for a Media Portal
MediaCardService	UAS media card configuration
MediaGatewayService	UAS media gateway configuration
NEInstanceService	Network element instance configuration and maintenance
NERecordStreamService	NE log, OM and accounting format path configuration
NEService	Network element configuration
NcasLinkMtcService	NCAS Link Maintenance configuration
Net2RouteService	Net2 Routable Networks configuration
NetworkAddService	Network Addresses configuration
NetworkTypeService	Choosing Network type for Media Portal Static Routes – Control, Net1, Net2 or OAM
OMQueryService	OM viewing
OssProfileService	OSS Profile data configuration (distributed to all Element Managers)
PasswordRulesService	User password rules configuration
PhysicalServerService	Server configuration
PhysicalSiteService	Physical site configuration

Table 16 Services

Privilege	Description
PolicyServerConnectionService	Choose Policy Server Connection data Application Manager ID (AMID) for a Session Manager
PolicyServerService	Policy Servers configuration
RTPPortalBladeService	RTP Portal blade configuration
RegisteredGwcService	Registered gateway controller service configuration
SecurityService	User/Role configuration and user display/forceoff capability
ServerLOMCommandService	Server maintenance for servers that are configured with a LOM server
ServerMonitorConfigService	Server monitor threshold configuration
ServerMonitorService	Server monitoring
SnmpProfileService	SNMP profile configuration
StaticRouteService	Static Routes configuration
SubnetMaskService	Subnet Masks configuration
VMGApearanceService	Virtual Media Gateway Appearance Configuration
VlanService	VLANs configuration

Deleting a role

You cannot delete a role if a user is assigned to the role.

- 1 From the System Management Console menu bar, select **Administration > Role Administration**.
The Roles window appears in the work area.
- 2 From the Roles window, select the role to delete and click **Delete**.
- 3 Click **Yes** to confirm the delete.

If the role is not referenced by any users, the entry disappears from the Roles window. If the role is referenced, the system rejects the deletion and a warning dialog box appears, indicating that the entry is referenced by data of type UserData.

Viewing and forcing off users

Administrators with SecurityService privileges can view all logged-on administrators and can force another administrator off the MCS system.

Use the following procedure to view administrators logged on to the MCS system and to force an administrator off the MCS system.

- 1 From the System Management Console menu bar, select **Administration > User Display/Forceoff**.

The Logged-in Users window appears in the work area.

- 2 To force an administrator off the MCS system, from the Logged-in Users window, select an entry and click **Force Off**.

- 3 Click **Yes** to confirm the Force Off.

The entry disappears from the Logged-in Users window and the system logs the administrator off.

User password rules

The System Management Console provides an interface for defining and changing administrator password policy. The default policy requires a minimum of four characters and has no rules that define the minimum number of digits and letters. Administrators with PasswordRulesService privilege can configure the password complexity rules.

Configuring password complexity

- 1 From the System Management Console **Main Menu**, select **Administration > User Password Rules**.

The Password Complexity Rules dialog box appears.

- 2 From the drop-down menu, select the **Minimum Length of Password**.
- 3 From the drop-down menu, select the **Minimum Number of Digits in Password**.

- 4 From the drop-down menu, select the **Minimum Number of Characters in Password**.
- 5 From the drop-down menu, select the **Maximum Number of Failed Authentication Attempts**.
- 6 From the drop-down menu, select the **Lockout Duration Seconds**.
- 7 Place a check in the **Enable Password Complexity Rules** check box.
- 8 Click **OK**.

Database export and import

To make global changes to the configuration data in the system, you can export the data, make the changes, and then import the changed configuration data. To perform the following procedure, you must have ExportImportService privileges.



Note: The configuration data does not include the provisioning data that is entered at the Provisioning Client.

You can also export or import passwords and properties for System Management Console (SMC) users from the SMC.

Exporting the password and properties for an SMC user

- 1 Log on to the **System Management Console**.
- 2 Select **Tools > DB Export**.
- 3 In the DB Export dialog box, click **Choose** and specify the saved file name and path.
- 4 In the **File Transfer Password** (required) text box, type the password for the mcpbulk user on the active System Manager server.
- 5 Select the Export Selected Service radio button.
- 6 Scroll the **Services Available for Export** window, and select **SecurityService**.

7 Click Export Now.

You can view the results by opening the exported file.

Importing the password and properties for an SMC user

Imported passwords can be in clear text or hashed format.

- 1** Log on to the **System Management Console**.
- 2** Select **Tools > DB Import**.
- 3** In the DB Export dialog box, click **Choose** and specify the path to the saved (import) file.
- 4** Click **Choose** and specify the path and name for the new (result) file.
- 5** In the **File Transfer Password** (required) text box, type the password for the mcpbulk user on the active System Manager server.
- 6** Click **Import Now**.
- 7** In the Save dialog box, assign a name for the file, and add a file extension for the application that you want to use to read the file (for example, *.txt, *.doc).
- 8** Click **Save**.

Provisioning Client interface

Start the Provisioning Client from the Management Console.

For information about using the Provisioning Client, see the *Provisioning Client User Guide* (NN42020-105).

Starting the Provisioning Client interface

- 1** Select the Provisioning Manager component in the GUI tree.
- 2** Select **Administration > Provisioning** from the menu bar.
- 3** Confirm the IP address of the Provisioning Client and click **OK**

If the IP address is correct, the Provisioning Client log on page loads in the workstation web browser.

Provisioning Client failed authentication

Administrators configure the failed authentication threshold and lockout duration parameters as part of the password complexity rules. If authentication fails, the user receives an "invalid login attempt" message. This error message appears for all failed authentication attempts due to invalid user ID, invalid password and lockout conditions.

Configuring failed authentication parameters

- 1 From the System Management Console **Main Menu**, select **Administration > User Password Rules**.
- 2 In the Password Complexity Rules dialog box, from the drop-down list, select the **Maximum Number of Failed Authentication Attempts**.
- 3 From the drop-down list, select the **Lockout Duration Seconds**.
- 4 Place a check in the **Enable Password Complexity Rules** check box.
- 5 Click **OK**.

For more information about configuring password complexity, see [“User password rules” on page 102](#).

Message of the day

The System Management Console supports a feature that can display a Message of the Day window after an administrator logs on. For an example of the window that appears, see [Figure 8 “Message of the day example” on page 106](#).

Figure 8 Message of the day example

To enable this feature, log on to the System Manager server and create a file named motd.txt. This file must be in /var/mcp/run/MCP_9.1/SM_x/data/. You can create this file with an editor like vi. If this file does not exist, no Message of the Day window appears.

Note that this file is not persisted after any software upgrade or update. During a software upgrade or update, the data directory and its contents are overwritten.

The system also does not automatically transfer the file to the second instance of the System Manager in redundant configurations. In redundant configurations, you must manually transfer the file or create it on the second instance.

HTTP Denial of Service mitigation

Denial of service (DOS) attacks cause HTTP messaging that can degrade system performance. The HTTP Denial of Service (DoS) Mitigation feature protects the Web server from DoS attacks. Administrators can enable this feature on a per-network element instance. The HTTP DoS mitigation feature applies to the following:

- Personal Agent
- Provisioning Client

Enable the HTTP DoS feature from the System Management Console. For more information about this feature, see the *Feature Description Guide* (NN42020-125).

Enabling HTTP DoS mitigation

Use the following generic procedure to enable HTTP DoS mitigation. For detailed procedures, see *Provisioning Client User Guide* (NN42020-105), or *Personal Agent User Guide* (NN42020-100).

- 1 From the System Management Console, select the <Network Element>.
- 2 Select **Configuration Parameters > HTTPDoS Parm Group**.
- 3 Configure the **Enable DoS filter** attribute to **true**.

The default value is false (disabled).

HTTP DoS engineering parameter group

Use the System Management Console to configure the Provisioning Client failed authentication threshold and lockout duration. These parameters are part of the password complexity rules. The parameters are:

- Maximum Number of Failed Authentication Attempts
 - range: 1-10
 - default: 3
- Lockout Duration Seconds
 - range: 0-300
 - default: 60 seconds

Use the System Management Console to configure the following HTTPDoS parameters:



Note: MAXINT is a hardware-independent Java constant. It is equal to 2147483647—or $2^{31}-1$.

- LockoutAudit Duration: the interval (in seconds) of the mark and sweep audit used to clear the lockout condition
 - range: 1-MAXINT
 - default: 60 seconds

- MaxNumLockouts: the maximum number of source IP addresses that can be locked out at a given time
 - range: 1-10 000
 - default: 10 000
- AlarmThresholds: the thresholds for the distributed DOS alarms, indicating the number of locked-out endpoints
 - minor alarm (first value) default: 10%
 - major alarm (second value) default: 50%
 - critical alarm (third value) default: 100%
- MaxAttemptsPerInterval: the number of new HTTP transactions per sample interval calculated
 - range: 1-MAXINT
 - default: 6
 - threshold rate = MaxAttemptsPerInterval/SampleInterval
- SampleInterval: the sample interval (in seconds) used in the transaction rate calculation
 - range: 1-MAXINT]
 - default: 2 seconds
- BucketCapacityFactor: used to determine the size of the token bucket
(BucketCapacityFactor * MaxAttemptsPerInterval = bucket size)
 - range: 1-MAXINT
 - default: 165

Increase this value to accommodate occasional spikes above the allowed sustained rate.
- MaxNumSuspects: the maximum number of source IP addresses that can be monitored at any given time
 - range: 1-MAXINT
 - default: 1000

For more information, see *Provisioning Client User Guide* (NN42020-105), or *Personal Agent User Guide* (NN42020-100).

Configuring HTTP DoS mitigation

Use the following generic procedure to configure HTTP DoS mitigation parameters. For detailed procedures, see *Provisioning Client User Guide* (NN42020-105), or *Personal Agent User Guide* (NN42020-100).

- 1 From the System Management Console, select the **<Network Element> Instance**.
- 2 Select **HTTPDoS Parm Group**.
- 3 Configure the parameters (**Parms**).

SIP Denial of Service mitigation

Denial of service (DOS) attacks cause SIP messaging that can degrade system performance. The SIP DoS mitigation feature protects the call server from DoS attacks. You can enable this feature on a per-network element instance. The SIP DoS mitigation feature applies to the following network elements:

- Session Manager
- IP Client Manager
- Provisioning Client
- Personal Agent

Enable the SIP DoS mitigation feature from the System Management Console. For more information about this feature, see *Feature Description Guide* (NN42020-125).

Enabling SIP DoS mitigation

Use the following generic procedure to enable SIP DoS mitigation. For detailed procedures, see *Session Manager Fundamentals* (NN42020-107), *IP Client Manager Fundamentals* (NN42020-106), *Provisioning Client User Guide* (NN42020-105), or *Personal Agent User Guide* (NN42020-100).

- 1 From the System Management Console, select the **<Network Element>**.
- 2 Select **Configuration Parameters > SIPDoS Parm Group**.

3 Configure the **Enable DoS filter** attribute to **true**.

The default value is false (disabled).

SIP DoS engineering parameter group

Use the SIP DoS engineering parameter group to configure threshold detection and lockout characteristics for the SIP DoS mitigation feature.

Use the System Management Console to configure the following parameters:



Note: MAXINT is a hardware-independent Java constant. It is equal to 2147483647—or $2^{31}-1$.

- LockoutAudit Duration—the interval (in seconds) of the audit used to clear the lockout condition
 - range: 1-MAXINT seconds
 - default: 60 seconds
- MaxNumberLockouts—the maximum number of source IP addresses that can be locked out at one time
 - range: 1-MAXINT
 - default: 10 000
- AlarmThresholds—the thresholds for the distributed DOS alarms, indicating the number of locked out endpoints
 - minor alarm (first value) default: 10%
 - major alarm (second value) default: 50%
 - critical alarm (third value) default: 100%
- MaxAttemptsPerInterval—the number of new HTTP transactions per sample interval
 - range: 1-MAXINT
 - Session Manager default: 20
 - other network element default: 5
- SampleInterval—the sample interval (in seconds), used in the transaction rate calculation
 - range: 1-MAXINT seconds
 - default: 5 seconds

- BucketCapacityFactor—used to determine the size of the token bucket
(BucketCapacityFactor \times MaxAttemptsPerInterval = bucket size)
 - range: 1-MAXINT
 - Session Manager default: 165
 - other network element default: 1
- MaxNumSuspects—the maximum number of source IP addresses that can be monitored at one time
 - range: 1-MAXINT
 - default: 1000

Calculations

Use the following calculations to determine the SIP DoS parameter values.

Sustained Rate = SIPTrans_MaxAttemptsPerInterval / SIPTrans_SampleInterval

BucketSize = num_attempts_per_interval \times SIPTrans_BucketCapacityFactor

BucketSize = BurstLength (BurstRate – SustainedRate)

SIPTrans_BucketCapacityFactor = 2160 / 20 = 108

Time to fill bucket = 2160 tokens / (4 tokens/s) = 540s

Example using the default values

Using the operating parameters, and assuming a 50 ms round trip delay, the following calculations can be made.

Sustained Rate = 20 / 5 = 4 trans/s

BurstRate = 1/50ms \times 1000ms/s \times 5 threads = 100 trans/s

BurstLength = 1s/100 trans \times 750 \times 3 = 22.5s (amount of time needed to send 750 subscribe messages 3 times)

BucketSize = 22.5 (100 – 4) = 2160 tokens

Configuring SIP DoS mitigation

Use the following generic procedure to configure SIP DoS mitigation parameters. For detailed procedures see *Session Manager Fundamentals* (NN42020-107), *IP Client Manager Fundamentals* (NN42020-106), the *Provisioning Client User Guide* (NN42020-105), or the *Personal Agent User Guide* (NN42020-100).

- 1 From the System Management Console, select the **<Network Element> Instance**.
- 2 Select **SIPDoS Parm Group**.
- 3 Configure the parameters (**Parms**).

Trusted node configuration

External SIP proxies or SIP test tools generate significant messaging traffic and can potentially exceed SIP DoS mitigation thresholds. To prevent the SIP DoS mitigation feature from blocking these messages, the administrator can either disable the feature, or configure a list of trusted IP addresses to be exempt from it.

Configuring trusted nodes

- 1 From the System Management Console, select **Network Data and Mtc > Addresses**.
- 2 In the Addresses window, click **Add**.
- 3 Enter the **Logical Name** and **IP Address** for this IP address, and then click **Apply**.
- 4 Select **External Nodes**.
- 5 In the External Nodes window, click **Add**.
- 6 Enter the **Name** of the external node and select the **Address** for the external node.

The name for the external node must be unique and it can be a maximum of six characters in length.

- 7 Select **Informational Elements**.
- 8 In the Informational Element window, click **Add**.

- 9 From the **Node** list, select the previously defined external node.
- 10 In the **ShortName** and **LongName** fields, enter short and long names for the informational element.

These names must be unique.
- 11 In the **Port** field, enter a port number.

The port number is usually 5060.
- 12 From the **Type** list, select the appropriate type of informational element.

The supported informational element types are:

 - Gateway: select for the IP address of a gateway such as the Communications Server 1000 (CS1K).
 - General: select for an IP address that is not a gateway, LDAP server, MAS, or BCP.
 - LDAP: select for an address of a Lightweight Directory Access Protocol (LDAP) server.
 - MAS: select for an address of a Media Application Server (MAS).
 - BCP: select for an address of a Border Control Point (BCP).
- 13 Check the **ExemptDoSPprotection** attribute.

Overload Engineering parameters

After the call queue exceeds a threshold (overload parameter), the system generates an alarm with the corresponding severity. The CallP Checkpointing Support feature adds the Minor and Major overload parameters. The overload parameters are:

- None—No overload exists.
- Minor—The system stops generating presence notifications, except to the system and to Administrators.
- Major—The system also blocks Instant Messages.
- Severe—The system blocks everything except in-session (sessions that are already in progress) messages.

Specifying four levels increases overload control. If you specify only two levels, or after an upgrade (only two levels exist), the system blocks everything but in-session messages after the Severe threshold is exceeded. After the call queue drops back below the threshold, the alarm clears and the MCS stops blocking new sessions.

Configuring call queue thresholds

- 1** Start the **System Management Console**.
- 2** Navigate to **Network Elements > Session Managers**.
- 3** Expand the **<Session Manager>** and select **Instance**.
The **<Session Manager Instance>** Engineering parameters dialog box appears in the right pane.
- 4** Select the **CallQueue Thresholds** parameter and click **-/+**.
- 5** In the **Value** text box, enter the new parameters, for example, 60, 70, 85, 100, and click **Apply**.

Troubleshooting

The topics in this chapter include:

- [“System Management Console connection is lost” on page 115](#)
- [“Font problems in System Management Console” on page 116](#)

System Management Console connection is lost

After the connection between the System Manager and System Management Console is lost, a dialog box and then a prompt to log on appears on your workstation screen.

A lost connection can be caused by

- network or connection-related problems
- failure of a System Manager component
- failure of the System Manager hosting server

Perform basic troubleshooting to determine if the fault is a network or connection-related problem.

If the connection is lost because of a failed System Manager or the hosting server, you can manually use the failover procedure to transfer the System Manager operations to the secondary System Manager. After the secondary System Manager is operational, you can reestablish the System Management Console connection.

For more information about the failover procedure, see *System Manager Fundamentals* (NN42020-109).

Font problems in System Management Console

The Java Runtime Environment (JRE) can have conflicts with Post Script (PS) fonts that are installed on the management PC. The conflict causes spacing problems with the text displayed in the System Management Console GUI. The text generates an extra space, which cuts off part of the text below. [“Example of the spacing problem generated by PS fonts” on page 116](#) illustrates the problem.

Figure 9 Example of the spacing problem generated by PS fonts



To resolve this problem, remove PS fonts from the WINNT/Fonts or Windows/Fonts directory on the management PC. PS fonts have the file extensions .PFB and .PFM.

Removing PS fonts from a workstation

- 1 On the workstation, navigate to the font folder.

C:\WINNT\Fonts (for Windows NT and Windows 2000)

C:\WINDOWS\Fonts (for Windows XP)

- 2 Identify and delete font files with the extensions .PFM or .PFB.
- 3 Restart the System Management Console.

If the System Management Console still displays the problem, check the **<Windows>\Fonts** directory again for font files with the .PFM or .PFB extension.

Multimedia Communication Portfolio

Multimedia Communication Server 5100

System Management Console User Guide

Copyright © 2008, Nortel Networks. All rights reserved.

Sourced in Canada

The information in this document is subject to change without notice. The statements, configurations, technical data, and recommendations in this document are believed to be accurate and reliable, but are presented without express or implied warranty. Users must take full responsibility for their applications of any products specified in this document. The information in this document is proprietary to Nortel Networks.

Nortel, Nortel (Logo), and the Globemark are trademarks of Nortel Networks.

Microsoft, Windows, Windows NT, Internet Explorer, and Outlook are trademarks of Microsoft Corporation.

Oracle is a trademark of Oracle Corporation.

All other trademarks are the property of their respective owners.

Publication number: NN42020-110

Product release: MCS 5100 Release 4.0

Document version: Standard 01.05

Date: January 2008

To provide feedback or report a problem in this document, go to www.nortel.com/documentfeedback.